CHANGE CONTROL INDEX

LTRS	REVISIONS		
ORIGINATOR	CHECKER	ENGINEER	
CHJC44-1B347-AA-00		INITIAL RELEASE	
CHJC44-1B347-AA-00-FNA-ECN/1		20171027	
SDHANAS3	RWAGNE43	RJOHNS15	

F-650 / 750 SUPER DUTY
INDEX

F-650 / 750 SUPER DUTY	Page
Model Lineup	2-10
Dimensional Data	
Regular Cab	11
Super Cab	12
Crew Cab	13
Ride Height, Cab Height & Frame Length	14, 15
Spring Capacities	16
Axle Track	17
Tire Dimension Data	18
Wheel & Tire Ratings	19
Tilt Hood & Back of cab	20
RC / SEAT H POINT / SC / CC	21, 22, 23, 24
Air Tank Locations	25-27
Air Dryer Locations	28
Battery Box Locations	29, 30
Fuel Tank Locations	31-33
Diesel Exhaust Fluid (Urea) Tank Locations	34
Exhaust System	35-41
Frame Data	
Frame Rail Profiles	42
Front Frame Extension	43, 44
Pro Loader Frame	45
Frame with Reinforcement	46
Frame without Reinforcement	47

F-650 / 750 SUPER DUTY (Cont'd)	Page
Crossmember Data	48, 49
Hendrickson Air Suspension	50-53
Spring Suspension	54-57
SEIC - PTO TRANSMISSION SPECIFICATION	58
PTO Mounting Dimensions	59
Electrical Wiring	
General Electrical Information	60-63
Electrical Schematics	64-73
SEIC / PTO Information	74-86
Air Brake System Schematics	87,88,89,90,91,92
Hydraulic Brake System Schematics	93
Air Accessories Schematic W/Air Dryer Compressor	94

F650/750 SUPER DUTY
MODEL LINEUP - DIESEL ENGINE
REGULAR CAB

SUPER DUTY REGULAR CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds
F-650 Straight Frame/Hydraulic	158	84	49	26,000	6412	3866	10278
F-650 Straight Frame/Hydraulic	176	102	70	26,000	6471	3929	10400
F-650 Straight Frame/Hydraulic	182	108	70	26,000	6480	3938	10418
F-650 Straight Frame/Hydraulic	194	120	75	26,000	6504	3963	10468
F-650 Straight Frame/Hydraulic	200	126	75	26,000	6518	3980	10499
F-650 Straight Frame/Hydraulic	212	138	81	26,000	6543	4005	10547
F-650 Straight Frame/Hydraulic	218	144	81	26,000	6559	4025	10584
F-650 Straight Frame/Hydraulic	224	150	87	26,000	6586	4052	10638
F-650 Straight Frame/Hydraulic	230	156	87	26,000	6595	4062	10656
F-650 Straight Frame/Hydraulic	242	168	100	26,000	6634	4104	10738
F-650 Straight Frame/Hydraulic	260	186	120	26,000	6682	4151	10833
F-650 Straight Frame/Air	158	84	49	26,000	6883	4149	11032
F-650 Straight Frame/Air	176	102	70	26,000	6942	4212	11154
F-650 Straight Frame/Air	182	108	70	26,000	6951	4221	11172
F-650 Straight Frame/Air	194	120	75	26,000	6975	4246	11222
F-650 Straight Frame/Air	200	126	75	26,000	6989	4263	11253
F-650 Straight Frame/Air	212	138	81	26,000	7014	4288	11301
F-650 Straight Frame/Air	218	144	81	26,000	7030	4308	11338
F-650 Straight Frame/Air	224	150	87	26,000	7057	4335	11392
F-650 Straight Frame/Air	230	156	87	26,000	7066	4345	11410
F-650 Straight Frame/Air	242	168	100	26,000	7105	4387	11492
F-650 Straight Frame/Air	260	186	120	26,000	7153	4434	11587
F-650 Kick-Up (ProLoader)/Hyd	158	84	63	22,000	5869	3538	9407
F-650 Kick-Up (ProLoader)/Hyd	182	108	75	22,000	5919	3592	9511
F-650 Kick-Up (ProLoader)/Hyd	194	120	75	22,000	5933	3607	9545
F-650 Kick-Up (ProLoader)/Hyd	218	144	81	22,000	5974	3655	9628
F-650 Kick-Up (ProLoader)/Hyd	242	168	100	22,000	6064	3749	9813
F-650 Kick-Up (ProLoader)/Air	158	84	63	22,000	6769	4081	10849
F-650 Kick-Up (ProLoader)/Air	182	108	75	22,000	6819	4135	10953
F-650 Kick-Up (ProLoader)/Air	194	120	75	22,000	6833	4150	10987
F-650 Kick-Up (ProLoader)/Air	218	144	81	22,000	6874	4198	11070
F-650 Kick-Up (ProLoader)/Air	242	168	100	22,000	6964	4292	11255
F-650 Tractor	146	72	39	27,500	6902	4160	11062
F-650 Tractor	158	84	39	27,500	6943	11106	11147

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - DIESEL ENGINE
REGULAR CAB (Cont'd)

SUPER DUTY REGULAR CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds	COMMENTS
F-750 Straight Frame/Hydraulic	158	84	49	31,000	6494	3914	10408	
F-750 Straight Frame/Hydraulic	176	102	70	31,000	6563	3987	10551	
F-750 Straight Frame/Hydraulic	182	108	70	31,000	6574	3998	10572	
F-750 Straight Frame/Hydraulic	194	120	75	31,000	6603	4028	10631	
F-750 Straight Frame/Hydraulic	200	126	75	31,000	6619	4047	10666	
F-750 Straight Frame/Hydraulic	212	138	81	31,000	6649	4077	10724	
F-750 Straight Frame/Hydraulic	218	144	81	31,000	6666	4098	10764	
F-750 Straight Frame/Hydraulic	224	150	87	31,000	6696	4128	10825	
F-750 Straight Frame/Hydraulic	230	156	87	31,000	6706	4139	10846	
F-750 Straight Frame/Hydraulic	242	168	100	31,000	6752	4188	10941	
F-750 Straight Frame/Hydraulic	260	186	120	31,000	6812	4247	11057	
F-750 Straight Frame/Hydraulic	281	207	120	31,000	7401	4853	12254	W/536 Frame & 41R
F-750 Straight Frame/Hydraulic	281	207	120	31,000	7059	4511	11571	W/538 or 539 Frame
F-750 Straight Frame/Air	158	84	49	31,000	7014	4228	11242	
F-750 Straight Frame/Air	176	102	70	31,000	7083	4301	11385	
F-750 Straight Frame/Air	182	108	70	31,000	7094	4312	11406	
F-750 Straight Frame/Air	194	120	75	31,000	7123	4342	11465	
F-750 Straight Frame/Air	200	126	75	31,000	7139	4361	11500	
F-750 Straight Frame/Air	212	138	81	31,000	7169	4391	11558	
F-750 Straight Frame/Air	218	144	81	31,000	7186	4412	11598	
F-750 Straight Frame/Air	224	150	87	31,000	7216	4442	11659	
F-750 Straight Frame/Air	230	156	87	31,000	7226	4453	11680	
F-750 Straight Frame/Air	242	168	100	31,000	7272	4502	11775	
F-750 Straight Frame/Air	260	186	120	31,000	7332	4561	11891	
F-750 Straight Frame/Air	281	207	120	31000	7921	5167	13088	W/536 Frame & 41R
F-750 Straight Frame/Air	281	207	120	31,000	7579	4825	12405	W/538 or 539 Frame
F-750 Tractor	146	72	39	31,000	7034	4240	11274	
F-750 Tractor	158	84	39	31,000	7075	4284	11359	

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - DIESEL ENGINE
SUPER CAB

SUPER DUTY SUPER CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds
F-650 Straight Frame/Hydraulic	179	84	49	26,000	6624	3935	10558
F-650 Straight Frame/Hydraulic	197	102	70	26,000	6678	3989	10665
F-650 Straight Frame/Hydraulic	203	108	70	26,000	6684	3995	10678
F-650 Straight Frame/Hydraulic	215	120	75	26,000	6710	4022	10731
F-650 Straight Frame/Hydraulic	221	126	75	26,000	6725	4041	10766
F-650 Straight Frame/Hydraulic	233	138	81	26,000	6750	4067	10816
F-650 Straight Frame/Hydraulic	239	144	81	26,000	6760	4077	10835
F-650 Straight Frame/Hydraulic	245	150	87	26,000	6760	4081	10840
F-650 Straight Frame/Hydraulic	251	156	87	26,000	6800	4119	10917
F-650 Straight Frame/Hydraulic	263	168	100	26,000	6829	4146	10974
F-650 Straight Frame/Air	179	84	49	26,000	7095	4218	11312
F-650 Straight Frame/Air	197	102	70	26,000	7149	4272	11419
F-650 Straight Frame/Air	203	108	70	26,000	7155	4278	11432
F-650 Straight Frame/Air	215	120	75	26,000	7181	4305	11485
F-650 Straight Frame/Air	221	126	75	26,000	7196	4324	11520
F-650 Straight Frame/Air	233	138	81	26,000	7221	4350	11570
F-650 Straight Frame/Air	239	144	81	26,000	7231	4360	11589
F-650 Straight Frame/Air	245	150	87	26,000	7231	4364	11594
F-650 Straight Frame/Air	251	156	87	26,000	7271	4402	11671
F-650 Straight Frame/Air	263	168	100	26,000	7300	4429	11728
F-650 Kick-Up (ProLoader)/Hyd	179	84	63	22,000	6079	3605	9683
F-650 Kick-Up (ProLoader)/Hyd	203	108	75	22,000	6120	3646	9765
F-650 Kick-Up (ProLoader)/Hyd	239	144	81	22,000	6186	3718	9901
F-650 Kick-Up (ProLoader)/Air	179	84	63	22,000	6979	4147	11125
F-650 Kick-Up (ProLoader)/Air	203	108	75	22,000	7020	4188	11207
F-650 Kick-Up (ProLoader)/Air	239	144	81	22,000	7086	4260	11343
F-650 Tractor	167	72	39	27,500	7107	4217	11324
F-650 Tractor	179	84	39	27,500	7191	4312	11504

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - DIESEL ENGINE
SUPER CAB (Cont'd)

SUPER DUTY SUPER CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds	COMMENTS
F-750 Straight Frame/Hydraulic	179	84	49	31,000	6711	3989	10700	
F-750 Straight Frame/Hydraulic	197	102	70	31,000	6775	4053	10827	
F-750 Straight Frame/Hydraulic	203	108	70	31,000	6783	4061	10844	
F-750 Straight Frame/Hydraulic	215	120	75	31,000	6814	4093	10906	
F-750 Straight Frame/Hydraulic	221	126	75	31,000	6831	4114	10945	
F-750 Straight Frame/Hydraulic	233	138	81	31,000	6861	4145	11005	
F-750 Straight Frame/Hydraulic	239	144	81	31,000	6872	4156	11027	
F-750 Straight Frame/Hydraulic	245	150	87	31,000	6908	4196	11104	
F-750 Straight Frame/Hydraulic	251	156	87	31,000	6916	4202	11119	
F-750 Straight Frame/Hydraulic	263	168	100	31,000	6953	4237	11189	
F-750 Straight Frame/Hydraulic	281	186	120	31,000	7211	4500	11710	W/536 Frame & 41R
F-750 Straight Frame/Hydraulic	281	186	120	31,000	7197	4486	11683	W/538 or 539 Frame
F-750 Straight Frame/Air	179	84	49	31,000	7231	4303	11534	
F-750 Straight Frame/Air	197	102	70	31,000	7295	4367	11661	
F-750 Straight Frame/Air	203	108	70	31,000	7303	4375	11678	
F-750 Straight Frame/Air	215	120	75	31,000	7334	4407	11740	
F-750 Straight Frame/Air	221	126	75	31,000	7351	4428	11779	
F-750 Straight Frame/Air	233	138	81	31,000	7381	4459	11839	
F-750 Straight Frame/Air	239	144	81	31,000	7392	4470	11861	
F-750 Straight Frame/Air	245	150	87	31,000	7428	4510	11938	
F-750 Straight Frame/Air	251	156	87	31,000	7436	4516	11953	
F-750 Straight Frame/Air	263	168	100	31,000	7473	4551	12023	
F-750 Straight Frame/Air	281	186	120	31,000	7731	4814	12544	W/536 Frame & 41R
F-750 Straight Frame/Air	281	186	120	31,000	7717	4800	12517	W/538 or 539 Frame
F-750 Tractor	167	72	39	31,000	7239	4297	11536	
F-750 Tractor	179	84	39	31,000	7323	4392	11716	

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - DIESEL ENGINE
CREW CAB

SUPER DUTY CREW CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds
F-650 Straight Frame/Hydraulic	182	72	49	26,000	6762	3938	10700
F-650 Straight Frame/Hydraulic	194	84	49	26,000	6795	3973	10767
F-650 Straight Frame/Hydraulic	212	102	70	26,000	6845	4023	10867
F-650 Straight Frame/Hydraulic	218	108	70	26,000	6859	4040	10900
F-650 Straight Frame/Hydraulic	230	120	75	26,000	6894	4081	10974
F-650 Straight Frame/Hydraulic	236	126	75	26,000	6903	4091	10994
F-650 Straight Frame/Hydraulic	248	136	81	26,000	6923	4108	11032
F-650 Straight Frame/Hydraulic	254	144	81	26,000	6933	4118	11051
F-650 Straight Frame/Hydraulic	260	150	87	26,000	6959	3997	11106
F-650 Straight Frame/Hydraulic	266	156	87	26,000	6968	4154	11123
F-650 Straight Frame/Hydraulic	278	168	100	26,000	7003	4191	11193
F-650 Straight Frame/Air	182	72	49	26,000	7233	4221	11454
F-650 Straight Frame/Air	194	84	49	26,000	7266	4256	11521
F-650 Straight Frame/Air	212	102	70	26,000	7316	4306	11621
F-650 Straight Frame/Air	218	108	70	26,000	7330	4323	11654
F-650 Straight Frame/Air	230	120	75	26,000	7365	4364	11728
F-650 Straight Frame/Air	236	126	75	26,000	7374	4374	11748
F-650 Straight Frame/Air	248	136	81	26,000	7394	4391	11786
F-650 Straight Frame/Air	254	144	81	26,000	7404	4401	11805
F-650 Straight Frame/Air	260	150	87	26,000	7430	4280	11860
F-650 Straight Frame/Air	266	156	87	26,000	7439	4437	11877
F-650 Straight Frame/Air	278	168	100	26,000	7474	4474	11947
F-650 Kick-Up (ProLoader)/Hyd	194	84	63	22,000	6248	3641	9889
F-650 Kick-Up (ProLoader)/Hyd	218	108	75	22,000	6283	3679	9962
F-650 Kick-Up (ProLoader)/Hyd	254	144	96	22,000	6393	3793	10186
F-650 Kick-Up (ProLoader)/Air	194	84	63	22,000	7148	4183	11331
F-650 Kick-Up (ProLoader)/Air	218	108	75	22,000	7183	4221	11404
F-650 Kick-Up (ProLoader)/Air	254	144	96	22,000	7293	4335	11628
F-650 Tractor	182	72	39	27,500	7295	4278	11573

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - DIESEL ENGINE
CREW CAB (CONT.)

SUPER DUTY CREW CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds
F-750 Straight Frame/Hydraulic	182	72	49	31,000	6851	3993	10843
F-750 Straight Frame/Hydraulic	194	84	49	31,000	6887	4031	10917
F-750 Straight Frame/Hydraulic	212	102	70	31,000	6947	4091	11038
F-750 Straight Frame/Hydraulic	218	108	70	31,000	6964	4111	11074
F-750 Straight Frame/Hydraulic	230	120	75	31,000	7034	4187	11158
F-750 Straight Frame/Hydraulic	236	126	75	31,000	6874	4028	11181
F-750 Straight Frame/Hydraulic	248	136	81	31,000	7038	4189	11228
F-750 Straight Frame/Hydraulic	254	144	81	31,000	7050	4201	11250
F-750 Straight Frame/Hydraulic	260	150	87	31,000	7080	4233	11312
F-750 Straight Frame/Hydraulic	266	156	87	31,000	7090	4242	11332
F-750 Straight Frame/Air	182	72	49	31,000	7371	4307	11677
F-750 Straight Frame/Air	194	84	49	31,000	7407	4345	11751
F-750 Straight Frame/Air	212	102	70	31,000	7467	4405	11872
F-750 Straight Frame/Air	218	108	70	31,000	7484	4425	11908
F-750 Straight Frame/Air	230	120	75	31,000	7523	4470	11992
F-750 Straight Frame/Air	236	126	75	31,000	7534	4482	12015
F-750 Straight Frame/Air	248	136	81	31,000	7558	4503	12062
F-750 Straight Frame/Air	254	144	81	31,000	7570	4515	12084
F-750 Straight Frame/Air	260	150	87	31,000	7600	4547	12146
F-750 Straight Frame/Air	266	156	87	31,000	7610	4556	12166
F-750 Tractor	182	72	39	31,000	7427	4358	11785

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - GASOLINE ENGINE
REGULAR CAB

SUPER DUTY REGULAR CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds	COMMENTS
F-650 Straight Frame	158	84	49	26,000	6001	3617	9618	
F-650 Straight Frame	176	102	70	26,000	6060	3680	9740	
F-650 Straight Frame	182	108	70	26,000	6069	3689	9758	
F-650 Straight Frame	194	120	75	26,000	6093	3714	9808	
F-650 Straight Frame	200	126	75	26,000	6107	3731	9839	
F-650 Straight Frame	212	138	81	26,000	6132	3756	9887	
F-650 Straight Frame	218	144	81	26,000	6148	3776	9924	
F-650 Straight Frame	224	150	87	26,000	6175	3803	9978	
F-650 Straight Frame	230	156	87	26,000	6184	3813	9996	
F-650 Straight Frame	242	168	100	26,000	6223	3855	10078	
F-650 Straight Frame	260	186	120	26,000	6271	3902	10173	
F-650 Kick-Up (ProLoader)	158	84	63	22,000	5458	3290	8748	
F-650 Kick-Up (ProLoader)	182	108	75	22,000	5508	3344	8852	
F-650 Kick-Up (ProLoader)	194	120	75	22,000	5525	3362	8886	
F-650 Kick-Up (ProLoader)	218	144	81	22,000	5563	3407	8969	
F-650 Kick-Up (ProLoader)	242	168	100	22,000	5653	3501	9154	
F-750 Straight Frame	158	84	49	31,000	6082	3666	9748	
F-750 Straight Frame	176	102	70	31,000	6151	3739	9891	
F-750 Straight Frame	182	108	70	31,000	6162	3750	9912	
F-750 Straight Frame	194	120	75	31,000	6191	3780	9971	
F-750 Straight Frame	200	126	75	31,000	6207	3799	10006	
F-750 Straight Frame	212	138	81	31,000	6237	3829	10064	
F-750 Straight Frame	218	144	81	31,000	6254	3850	10104	
F-750 Straight Frame	224	150	87	31,000	6284	3880	10165	
F-750 Straight Frame	230	156	87	31,000	6294	3891	10186	
F-750 Straight Frame	242	168	100	31,000	6340	3940	10281	
F-750 Straight Frame	260	186	120	31,000	6400	3999	10397	
F-750 Straight Frame	281	207	120	31,000	6989	4605	11594	W/536 Frame & 41R
F-750 Straight Frame	281	207	120	31,000	6647	4263	10911	W/538 or 539 Frame

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - GASOLINE ENGINE
SUPER CAB

SUPER DUTY SUPER CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds	COMMENTS
F-650 Straight Frame	179	84	49	26,000	6213	3686	9898	
F-650 Straight Frame	197	102	70	26,000	6267	3740	10005	
F-650 Straight Frame	203	108	70	26,000	6273	3746	10018	
F-650 Straight Frame	215	120	75	26,000	6299	3773	10071	
F-650 Straight Frame	221	126	75	26,000	6314	3792	10106	
F-650 Straight Frame	233	138	81	26,000	6339	3818	10156	
F-650 Straight Frame	239	144	81	26,000	6349	3828	10175	
F-650 Straight Frame	245	150	87	26,000	6349	3832	10180	
F-650 Straight Frame	251	156	87	26,000	6389	3870	10257	
F-650 Straight Frame	263	168	100	26,000	6418	3897	10314	
F-650 Kick-Up (ProLoader)	179	84	63	22,000	5668	3357	9024	
F-650 Kick-Up (ProLoader)	203	108	75	22,000	5710	3399	9108	
F-650 Kick-Up (ProLoader)	239	144	81	22,000	5775	3470	9242	
F-750 Straight Frame	179	84	49	31,000	6299	3741	10040	
F-750 Straight Frame	197	102	70	31,000	6363	3805	10167	
F-750 Straight Frame	203	108	70	31,000	6371	3813	10184	
F-750 Straight Frame	215	120	75	31,000	6402	3845	10246	
F-750 Straight Frame	221	126	75	31,000	6419	3866	10285	
F-750 Straight Frame	233	138	81	31,000	6449	3897	10345	
F-750 Straight Frame	239	144	81	31,000	6460	3908	10367	
F-750 Straight Frame	245	150	87	31,000	6496	3947	10444	
F-750 Straight Frame	251	156	87	31,000	6504	3954	10459	
F-750 Straight Frame	263	168	100	31,000	6541	3989	10529	
F-750 Straight Frame	281	186	120	31,000	6799	4252	11050	W/536 Frame & 41R
F-750 Straight Frame	281	186	120	31,000	6785	4238	11023	W/538 or 539 Frame

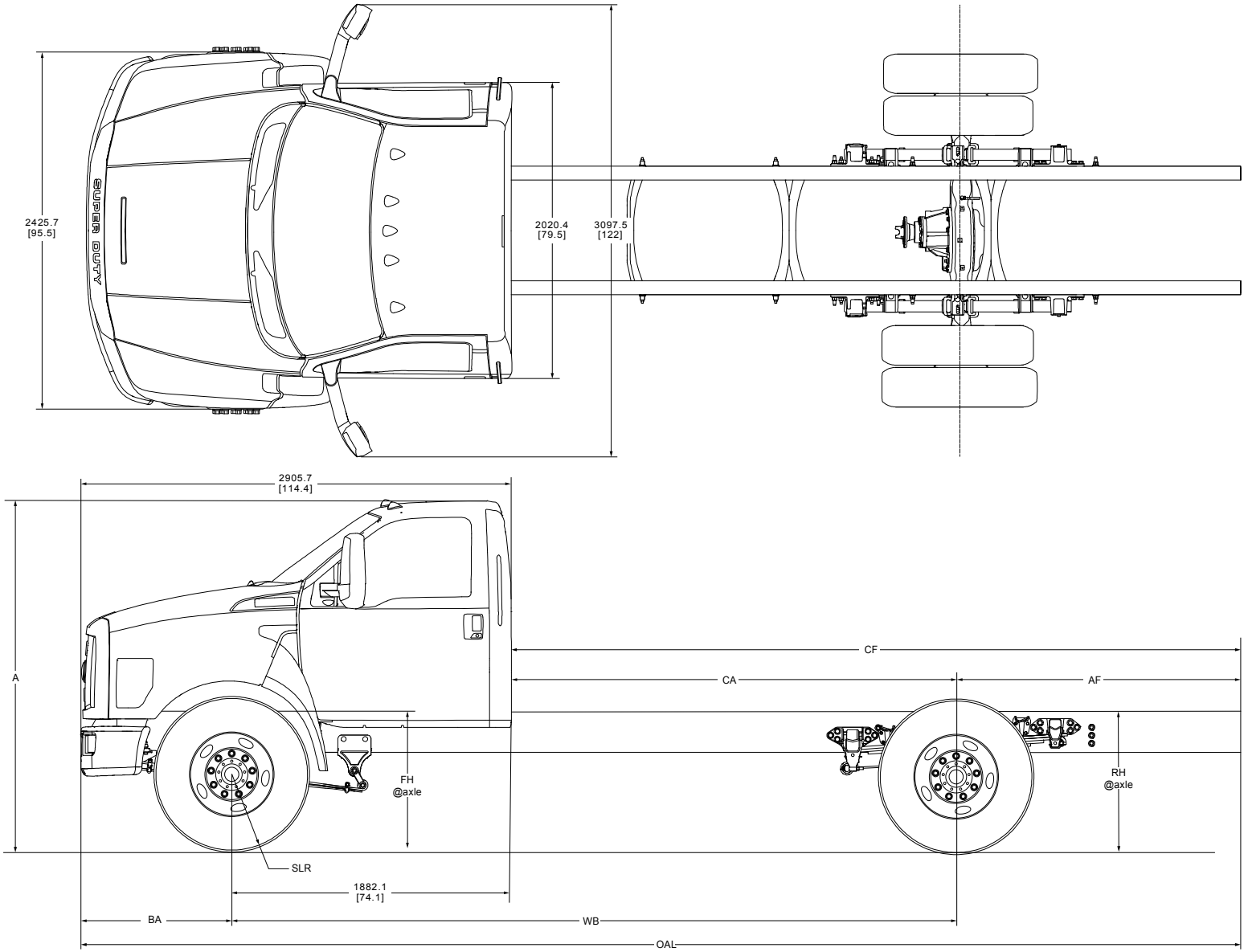
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
MODEL LINEUP - GASOLINE ENGINE
CREW CAB

SUPER DUTY CREW CAB	WHEELBASE Inches	CA Inches	AF Inches	GVWR pounds	FRONT CURB Wt pounds	REAR CURB Wt pounds	BASE CURB Wt pounds
F-650 Straight Frame	182	72	49	26,000	6351	3689	10040
F-650 Straight Frame	194	84	49	26,000	6384	3724	10107
F-650 Straight Frame	212	102	70	26,000	6434	3774	10207
F-650 Straight Frame	218	108	70	26,000	6448	3791	10240
F-650 Straight Frame	230	120	75	26,000	6483	3832	10314
F-650 Straight Frame	236	126	75	26,000	6492	3842	10334
F-650 Straight Frame	248	136	81	26,000	6512	3859	10372
F-650 Straight Frame	254	144	81	26,000	6522	3869	10391
F-650 Straight Frame	260	150	87	26,000	6548	3897	10446
F-650 Straight Frame	266	156	87	26,000	6557	3905	10463
F-650 Straight Frame	278	168	100	26,000	6592	3942	10533
F-650 Kick-Up (ProLoader)	194	84	63	22,000	5537	3393	9230
F-650 Kick-Up (ProLoader)	218	108	75	22,000	5872	3431	9303
F-650 Kick-Up (ProLoader)	254	144	96	22,000	5982	3545	9527
F-750 Straight Frame	182	72	49	31,000	6439	3745	10183
F-750 Straight Frame	194	84	49	31,000	6475	3783	10257
F-750 Straight Frame	212	102	70	31,000	6535	3843	10378
F-750 Straight Frame	218	108	70	31,000	6552	3863	10414
F-750 Straight Frame	230	120	75	31,000	6591	3908	10498
F-750 Straight Frame	236	126	75	31,000	6602	3920	10521
F-750 Straight Frame	248	136	81	31,000	6626	3941	10568
F-750 Straight Frame	254	144	81	31,000	6638	3953	10590
F-750 Straight Frame	260	150	87	31,000	6668	3985	10652
F-750 Straight Frame	266	156	87	31,000	6678	3994	10672

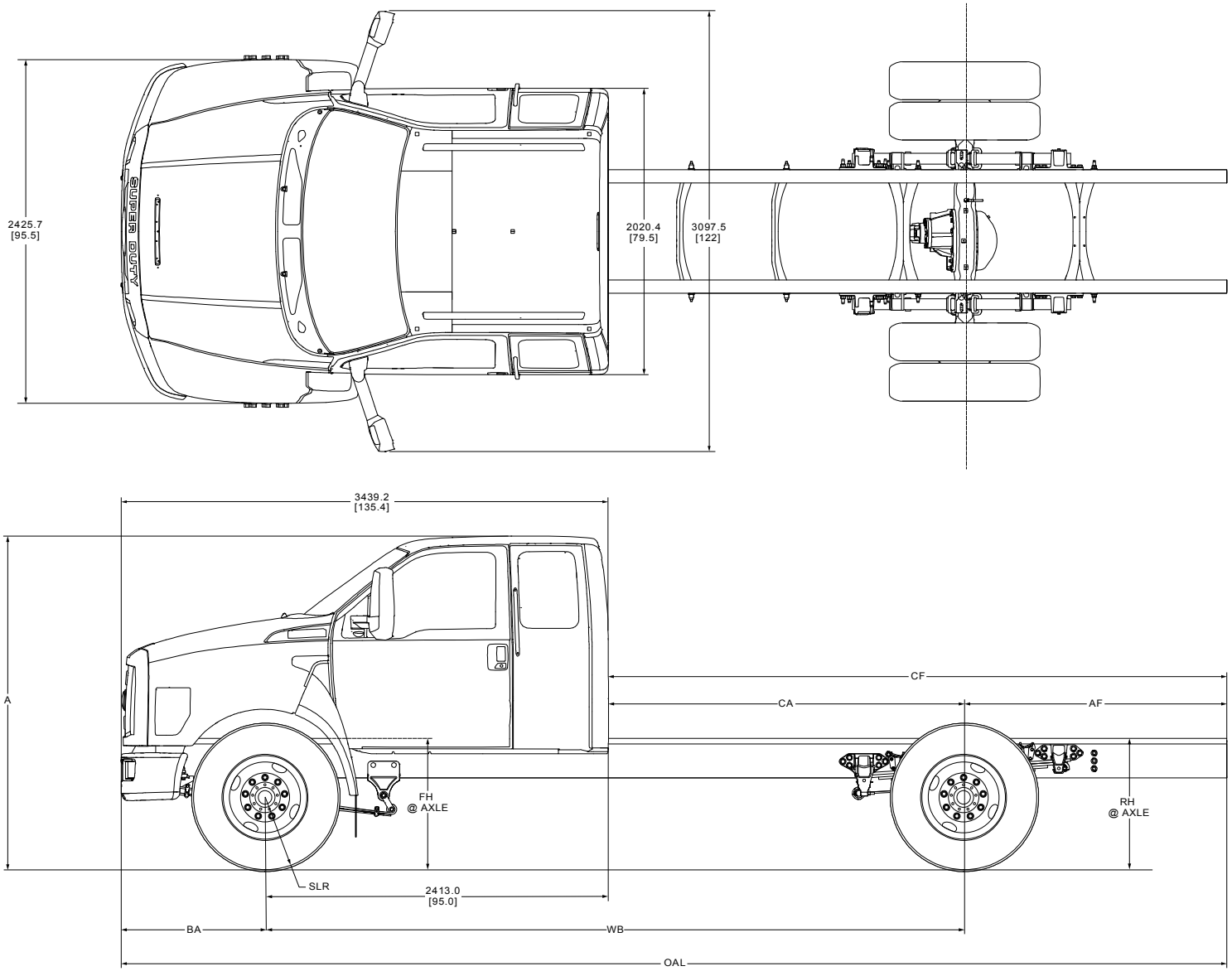
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
REGULAR CAB



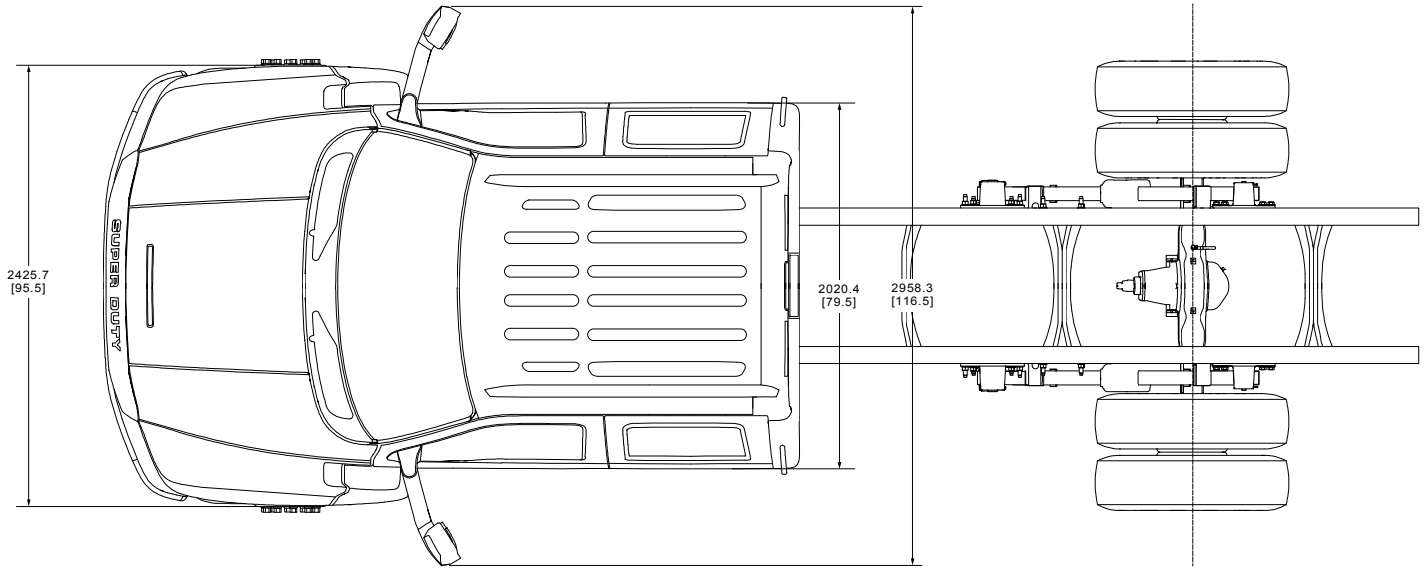
NOTES — [ ] DIMENSIONS ARE INCHES.

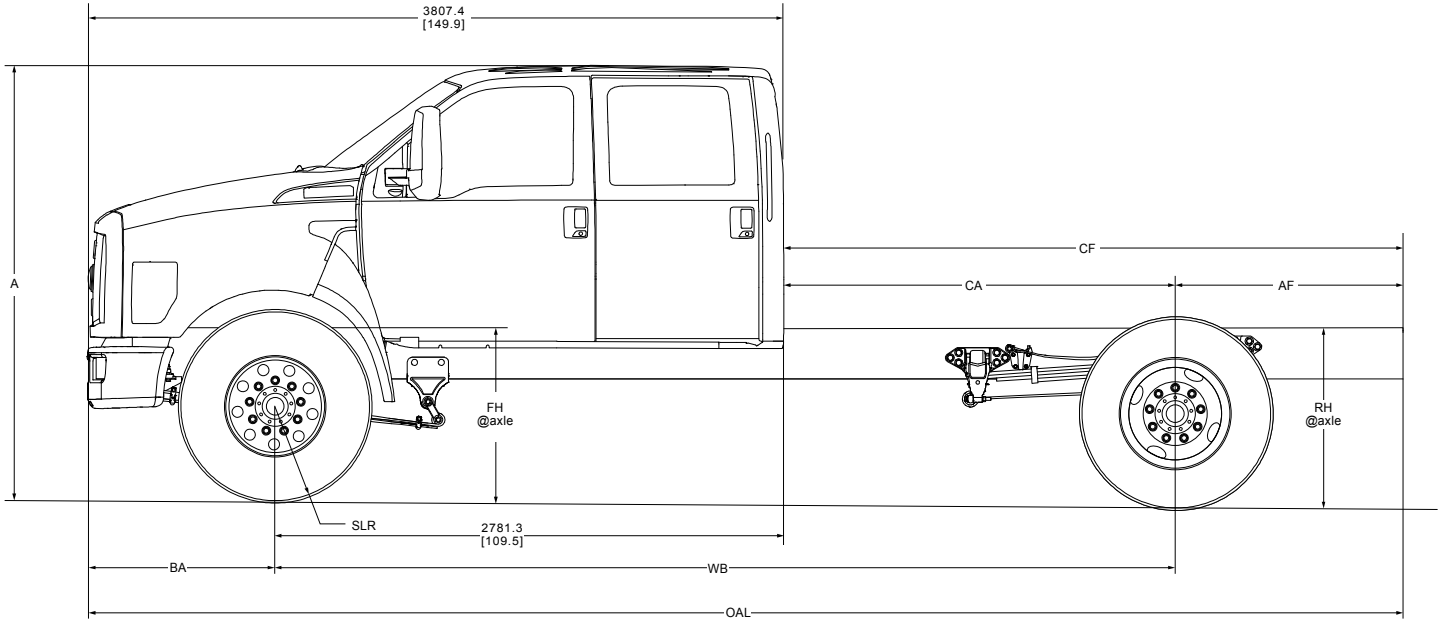
F650/750 SUPER DUTY
DIMENSIONAL DATA
SUPER CAB



NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
CREW CAB





NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
RIDE HEIGHT, CAB HEIGHT & FRAME LENGTH

FRONT RIDE HEIGHTS, FH @ Axle									REGULAR CAB		SUPER CAB		CREW CAB	
MODEL	STD FRONT TIRE	GVWR	FRONT AXLE	SPRING CAPACITY	EMPTY REG CAB mm [in]	EMPTY SUPER CAB mm [in]	EMPTY CREW CAB mm [in]	LOADED ALL CAB mm [in]	CAB HEIGHT VALUE "A" EMPTY	CAB HEIGHT VALUE "A" LOADED	CAB HEIGHT VALUE "A" EMPTY	CAB HEIGHT VALUE "A" LOADED	CAB HEIGHT VALUE "A" EMPTY	CAB HEIGHT VALUE "A" LOADED
F650 Kick up (8.5" Frame)	245/70 R19.5	24,000-27,500	8,500	8,500	844.5 [33.2]	843.0 [33.2]	840.0 [33.1]	805.0 [31.7]	2309.9 [94.9]	2273.3 [89.5]	2307.9 [90.9]	2272.9 [89.5]	2305.5 [90.8]	2278.2 [89.7]
F-650 w/19.5" Wheels (8.5" Frame)	245/70 R19.5	24,000-27,500	8,500	8,500	840.0 [33.1]	839.0 [33.0]	838.0 [33.0]	805.0 [31.7]	2310.7 [91.0]	2273.3 [89.5]	2309.2 [90.9]	2275.4 [89.6]	2308.0 [90.9]	2282.5 [89.9]
		25,500-29,000	10,000	10,000	842.5 [33.2]	844.0 [33.2]	843.0 [33.2]	795.9 [31.3]	2314.4 [91.1]	2266.7 [89.2]	2313.1 [91.1]	2268.5 [89.3]	2311.9 [91.0]	277.31 [89.6]
F650 w/22.5" Wheels (9.5" Frame)	11 R22.5	25,500-31,001	8,500	8,500	935.0 [36.8]	935.0 [36.8]	932.0 [36.7]	903.0 [35.6]	2406.2 [94.7]	2374.2 [93.2]	2403.9 [94.6]	2373.3 [93.4]	2403.7 [94.6]	2373.3 [93.4]
			10,000	10,000	940.0 [37.0]	939.0 [37.0]	938.0 [36.9]	894.0 [35.2]	2409.9 [94.9]	2368.2 [93.2]	2408.5 [94.8]	2367.2 [93.2]	2407.7 [94.8]	2366.3 [93.2]
F750 (9.5" Frame)	11 R22.5	31,000-35,000	10,000	10,000	940.0 [37.0]	938.0 [36.9]	938.0 [36.9]	894.0 [35.2]	2410.9 [94.9]	2367.5 [93.2]	2408.6 [94.8]	2368.2 [93.2]	2408.5 [94.8]	2366.3 [93.2]
		33,000-36,200	12,000	12,000	949.0 [37.4]	947.0 [37.3]	947.0 [37.3]	896.0 [35.3]	2417.6 [95.2]	2369.5 [93.3]	2415.6 [95.1]	2368.0 [93.2]	2415.5 [95.1]	2367.9 [93.2]
		36,200-37,000	14,000	14,000	954.0 [37.6]	953.0 [37.5]	953.0 [37.5]	895.0 [35.2]	2421.3 [95.3]	2368.2 [93.2]	2420.1 [95.3]	2367.2 [93.2]	2420.2 [95.3]	2367.1 [93.2]

REAR RIDE HEIGHTS, RH @ Axle							
MODEL	STD REAR TIRE	GVWR	REAR AXLE	SPRING CAPACITY	EMPTY REG CAB mm [in]	LOADED ALL CAB mm [in]	SUSP TYPE
F650 Pro-Loader with 9.125 Tapered Rail	245/70 R19.5	24,000	13,500	15,500	845.0 [33.3]	819 [32.2]	MULTI-LEAF
			13,500	15,500	844.0 [33.2]	819 [32.2]	MULTI-LEAF
		27,500	17,500	19,000	863.0 [34.0]	830.0 [32.7]	MULTI-LEAF
			17,500	19,000	863.0 [34.0]	830.0 [32.7]	MULTI-LEAF
		24,000	17,500	15,500	845.0 [33.3]	809.0 [31.8]	MULTI-LEAF
			17,500	15,500	844.0 [33.2]	809.0 [31.8]	MULTI-LEAF
		20,500 - 27,500	13,500-17,500	12,000-19,000	820.0 [32.3]	820.0 [32.3]	AIR (5.3")
F650 Pro-Loader with 9.125 ST FRAME	245/70 R19.5	20,500 - 27,500	17,500	19,000	863.0 [34.0]	830.0 [32.7]	MULTI-LEAF
			17,500	19,000	863.0 [34.0]	830.0 [32.7]	MULTI-LEAF
F650 with 10.125" ST FRAME	11 R22.5	27,500-33,000	17,500	19,000	961.0 [37.8]	928.0 [36.5]	MULTI-LEAF
			17,500	19,000	960.0 [37.8]	928.0 [36.5]	MULTI-LEAF
			19,000	19,000	957.0 [37.7]	921.0 [36.9]	MULTI-LEAF
			19,000	19,000	956.0 [37.6]	921.0 [36.9]	MULTI-LEAF
			19,000	21,000	970.0 [38.2]	936.9 [36.9]	MULTI-LEAF
			19,000	21,000	969.0 [38.1]	936.9 [36.9]	MULTI-LEAF
			17,500	19,000	963.0 [37.9]	963.0 [37.9]	AIR (9.25")-DSL
			19,000	21,000	963.0 [37.9]	963.0 [37.9]	AIR (9.25")-DSL
F750 with 10.125" ST FRAME	11 R22.5	31,000-37,000	21,000	21,000	965.0 [38.0]	928.0 [36.5]	MULTI-LEAF
			21,000	21,000	964.0 [38.0]	928.0 [36.5]	MULTI-LEAF
			23,000	23,000	971.0 [38.2]	934.9 [36.8]	MULTI-LEAF
			26,000	31,000	973.0 [38.3]	942.9 [37.1]	MULTI-LEAF
			21,000-26,000	21,000-23,000	963.0 [37.9]	963.0 [37.9]	AIR (9.25")-DSL

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
RIDE HEIGHT, CAB HEIGHT & FRAME LENGTH (Cont'd)

REGULAR CAB Configuration

WB		BA		CF		CA		AF		OAL	
[in]	mm	[in]	mm	[in]	mm	[in]	mm	[in]	mm	[in]	mm
146	3708	40.4	1026	111.0	2819	72.0	1829	39	991	225	5725
158	4013	40.4	1026	123.0	3124	84.0	2134	39	991	237	6029
158	4013	40.4	1026	133.0	3378	84.0	2134	49	1245	247	6283
158	4013	40.4		147.0	3734	84.0	2134	63	1600	261	6639
176	4470	40.4	1026	172.0	4369	102.0	2591	70	1778	286	7274
182	4623	40.4	1026	178.0	4521	108.0	2743	70	1778	292	7426
182	4623	40.4	1026	183.0	4648	108.0	2743	75	1905	297	7553
194	4928	40.4	1026	195.0	4953	120.0	3048	75	1905	309	7858
194	4928	40.4	1026	195.0	4953	120.0	3048	75	1905	309	7858
200	5080	40.4	1026	201.0	5105	126.0	3200	75	1905	315	8011
212	5385	40.4	1026	219.0	5563	138.0	3505	81	2057	333	8468
218	5537	40.4	1026	225.0	5715	144.0	3658	81	2057	339	8620
218	5537	40.4	1026	225.0	5715	144.0	3658	81	2057	339	8620
224	5690	40.4	1026	237.0	6020	150.0	3810	87	2210	351	8925
230	5842	40.4	1026	243.0	6172	156.0	3962	87	2210	357	9077
242	6147	40.4	1026	268.0	6807	168.0	4267	100	2540	382	9712
242	6147	40.4	1026	268.0	6807	168.0	4267	100	2540	382	9712
260	6604	40.4	1026	279.0	7087	186.0	4724	93	2362	393	9992
260	6604	40.4	1026	306.0	7772	186.0	4724	120	3048	420	10678
281	7137	40.4	1026	327.0	8306	207.0	5258	120	3048	441	11211

CREW CAB Configuration

WB		BA		CF		CA		AF		OAL	
[in]	mm	[in]	mm	[in]	mm	[in]	mm	[in]	mm	[in]	mm
182	4623	40.4	1026	111.0	2819	72.0	1829	39	991	261	6639
182	4623	40.4	1026	121.0	3073	72.0	1829	49	1245	271	6893
194	4928	40.4	1026	133.0	3378	84.0	2134	49	1245	283	7198
194	4928	40.4	1026	147.0	3734	84.0	2134	63	1600	297	7553
212	5385	40.4	1026	172.0	4369	102.0	2591	70	1778	322	8188
218	5537	40.4	1026	178.0	4521	108.0	2743	70	1778	328	8341
218	5537	40.4	1026	183.0	4648	108.0	2743	75	1905	333	8468
230	5842	40.4	1026	195.0	4953	120.0	3048	75	1905	345	8773
236	5994	40.4	1026	201.0	5105	126.0	3200	75	1905	351	8925
248	6299	40.4	1026	219.0	5563	138.0	3505	81	2057	369	9382
254	6452	40.4	1026	240.0	6096	144.0	3658	96	2438	390	9916
254	6452	40.4	1026	225.0	5715	144.0	3658	81	2057	375	9535
260	6604	40.4	1026	237.0	6020	150.0	3810	87	2210	387	9839
266	6756	40.4	1026	243.0	6172	156.0	3962	87	2210	393	9992
278	7061	40.4	1026	268.0	6807	168.0	4267	100	2540	418	10627

SUPER CAB Configuration

WB		BA		CF		CA		AF		OAL	
[in]	mm	[in]	mm	[in]	mm	[in]	mm	[in]	mm	[in]	mm
167	4242	40.4	1026	111.0	2819	72.0	1829	39	991	246	6258
179	4547	40.4	1026	123.0	3124	84.0	2134	39	991	258	6563
179	4547	40.4	1026	133.0	3378	84.0	2134	49	1245	268	6817
179	4547	40.4	1026	147.1	3736	84.1	2136	63	1600	282	7172
197	5004	40.4	1026	171.8	4364	101.8	2586	70	1778	307	7807
203	5156	40.4	1026	178.1	4524	108.1	2746	70	1778	313	7960
203	5156	40.4	1026	183.1	4651	108.1	2746	75	1905	318	8087
215	5461	40.4	1026	194.9	4950	119.9	3045	75	1905	330	8392
221	5613	40.4	1026	200.8	5100	125.8	3195	75	1905	336	8544
233	5918	40.4	1026	219.0	5563	138.0	3505	81	2057	354	9001
239	6071	40.4	1026	225.0	5715	144.0	3658	81	2057	360	9154
239	6071	40.4	1026	225.0	5715	144.0	3658	81	2057	360	9154
245	6223	40.4	1026	237.0	6020	150.0	3810	87	2210	372	9458
251	6375	40.4	1026	243.0	6172	156.0	3962	87	2210	378	9611
263	6680	40.4	1026	268.0	6807	168.0	4267	100	2450	403	10246
281	7137	40.4	1026	306.0	7772	186.0	4724	120	3048	441	11211

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
SPRING CAPACITIES

FRONT SPRING IDENTIFICATION AND CAPACITY RATINGS

FRONT SUSPENSION CAPACITY AT GROUND i.e., SPRINGS/BRACKETS LBS	TOTAL NO.OF LEAVES	TOTAL SPRING PACK THICKNESS AT PAD - IN	ONE SPRING CAPACITY AT PAD - LBS	ONE SPRING CAPACITY AT GROUND - LBS
8,500	2	3.64	3,825	4,250
10,000	2	3.60	4,500	5,000
12,000	2	3.62	5,400	6,000
13,200	3	3.62	5,940	6,600
14,000	3	3.68	6,300	7,000

REAR SPRING IDENTIFICATION AND CAPACITY RATINGS

	PER AXLE END					
FULL SUSPENSION CAPACITY AT GROUND i.e., SPRINGS/BRACKETS LBS	TOTAL NO.OF LEAVES MAIN SPRING	TOTAL SPRING PACK THICKNESS AT PAD - IN	MAIN SPRING CAPACITY AT PAD - LBS	AUXILIARY SPRING CAPACITY AT PAD LBS	MAIN & AUXILIARY COMBINATION CAPACITY AT PAD - LBS	MAIN & AUXILIARY COMBINATION CAPACITY AT GROUND - LBS
13,500	9	5.37	6,075	-	6,075	6,750
15,500	9	7.17	5,350	1,450	6,800	7,750
19,000	10	7.74	7,097	1,450	8,547	9,500
21,000	10	8.03	7,991	1,450	9,441	10,500
23,000	10	8.3	8,805	1,450	10,255	11,500
31,000	10	9.05	12,551	1,450	14,001	15,500

REAR AIR SUSPENSION IDENTIFICATION AND CAPACITY RATINGS

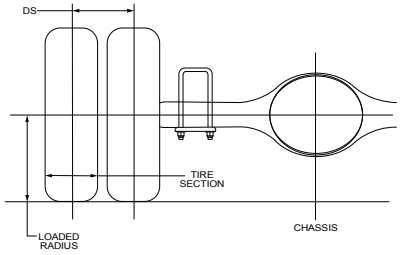
	PER AXLE END			
FULL SUSPENSION CAPACITY AT GROUND LBS	AIR SPRING DIMENSIONS AT LOAD (EXCLUDING MOUNTING BRACKETS)	SYSTEM CAPACITY AT PAD - LBS	SYSTEM CAPACITY AT GROUND - LBS	PRESSURE AT RATED LOAD PSI
12,000	12.23" High X 12.6" Diameter	5,400	6,000	41
19,000	12.24" High X 12.6" Diameter	8,550	9,500	65
21,000	12.15" High X 12.6" Diameter	9,450	10,500	72
23,000	11.92" High X 12.6" Diameter	10,350	11,500	80

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
AXLE TRACK

FRONT AXLE TRACK

DISC	WHEEL	WHEEL TYPE	DISC THICKNESS		WHEEL OFFSET		FRONT AXLE TRACK							
							8,500 lb				10,000 - 14,000 lb			
							BRAKE TYPE				BRAKE TYPE			
							AIR		HYD		AIR		HYD (10-12K)	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
19.5x6.75	Steel	8H	0.43	11.0	5.17	131	-	-	84.0	2133	-	-	-	-
19.5x7.50	Steel	10H	0.43	11.0	5.97	152	81.0	2057	81.0	2057	82.1	2084	82.3	2090
19.5x7.50	Aluminum	10H	0.87	22.0	5.23	133	82.5	2094	82.5	2094	81.8	2079	82.1	2085
22.5x7.50	Steel	10H	0.43	10.8	6.08	154	80.8	2051	80.8	2051	81.6	2073	81.8	2079
22.5x8.25	Steel	10H	0.43	10.8	6.20	157	80.5	2045	80.5	2045	83.5	2122	83.8	2128
22.5x8.25	Aluminum	10H	0.85	21.6	5.79	147	81.3	2066	81.3	2066	82.4	2094	82.7	2100



REAR AXLE
DUAL TIRE / WHEEL

REAR AXLE TRACK

DISC	WHEEL	WHEEL TYPE	DISC THICKNESS		WHEEL OFFSET		DUAL SPACING (DS)		REAR AXLE TRACK							
									BRAKE TYPE				BRAKE TYPE			
									AIR		HYD		AIR		HYD	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
19.5x6.75	Steel	8H	0.43	11.0	5.60	142.2	11.20	284.5	-	-	72.6	1844	-	-	-	-
19.5x7.50	Steel	10H	0.43	11.0	6.40	162.6	12.80	325.1	72.7	1848	72.6	1844	-	-	-	-
19.5x7.50 19.5x7.50	Alum Outer Steel Inner	10H	0.87	22.1	6.40	162.6	13.02	330.7	73.0	1853	72.8	1849	-	-	-	-
22.5x7.50	Steel	10H	0.43	10.8	6.50	165.1	13.00	330.2	72.7	1847	72.6	1843	72.7	1847	-	-
22.5x8.25	Steel	10H	0.43	10.8	6.62	168.1	13.24	336.3	72.7	1847	72.6	1843	72.7	1847	-	-
22.5x8.25	Aluminum	10H	0.87	22.1	6.62	168.1	13.46	341.8	72.9	1853	72.8	1849	72.9	1853	-	-

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
TIRE DIMENSION DATA

Size	Max Infl (psi)	Max Ford Rim (in.)	CS (in.)	OD (in.)	SLR (in.)	RPM
245/70R19.5G	110	7.50	10.24	34.06	15.5	618
245/70R19.5H	120	7.50	10.24	34.06	15.5	621
265/70R19.5G	110	7.50	10.83	34.96	16.0	604
11R22.5G	105	8.25	11.88	42.82	19.4	496
11R22.5H	120	8.25	11.88	42.82	19.4	497
255/70R22.5H	120	7.50	10.85	37.44	17.3	564
275/80R22.5G	110	8.25	11.42	41.02	18.8	510
275/80R22.5H	120	8.25	11.42	41.02	18.7	509
295/80R22.5H	123	9.00	11.90	42.20	19.3	501

NOTES — [ ] DIMENSIONS ARE INCHES.

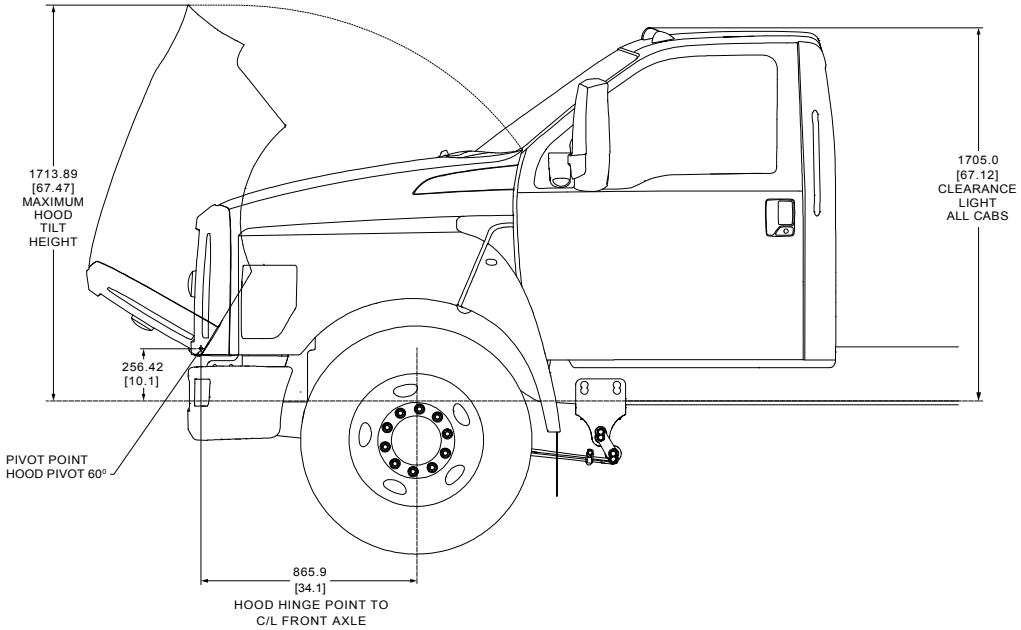
F650/750 SUPER DUTY
DIMENSIONAL DATA
WHEEL & TIRE RATINGS

TIRE SIZE, LOAD RANGE (PR)	WHEEL WIDTH (in) & TYPE	MAXIMUM TIRE & WHEEL CAPACITY PER AXLE (lb) @ PSI	
		FRONT	REAR
245/70R19.5 G	6.75 in. 8 stud steel	9,080 @ 110 psi	17,200 @ 110 psi
	7.50 in. 10 stud steel	9,080 @ 110 psi	17,200 @ 110 psi
	7.50 in. 10 stud aluminum	9,080 @ 110 psi	17,200 @ 110 psi
245/70R19.5 H	6.75 in. 8 stud steel	9,880 @ 115 psi	18,700 @ 115 psi
	7.50 in. 10 stud steel	9,880 @ 115 psi	18,700 @ 115 psi
	7.50 in. 10 stud aluminum	9,880 @ 115 psi	18,700 @ 115 psi
265/70R19.5 G	6.75 in. 8 stud steel	10,140 @ 110 psi	18,700 @ 110 psi
	7.50 in. 10 stud steel	10,140 @ 110 psi	18,700 @ 110 psi
	7.50 in. 10 stud aluminum	10,140 @ 110 psi	18,700 @ 110 psi
11R22.5 G	7.50 in. 10 stud steel	12,350 @ 105 psi	23,360 @ 105 psi
	8.25 in. 10 stud steel	12,350 @ 105 psi	23,360 @ 105 psi
	8.25 in. 10 stud aluminum	12,350 @ 105 psi	23,360 @ 105 psi
11R22.5 H	7.50 in. 10 stud steel	13,220 @ 120 psi	24,020 @ 120 psi
	8.25 in. 10 stud steel	13,220 @ 120 psi	24,020 @ 120 psi
	8.25 in. 10 stud aluminum	13,220 @ 120 psi	24,020 @ 120 psi

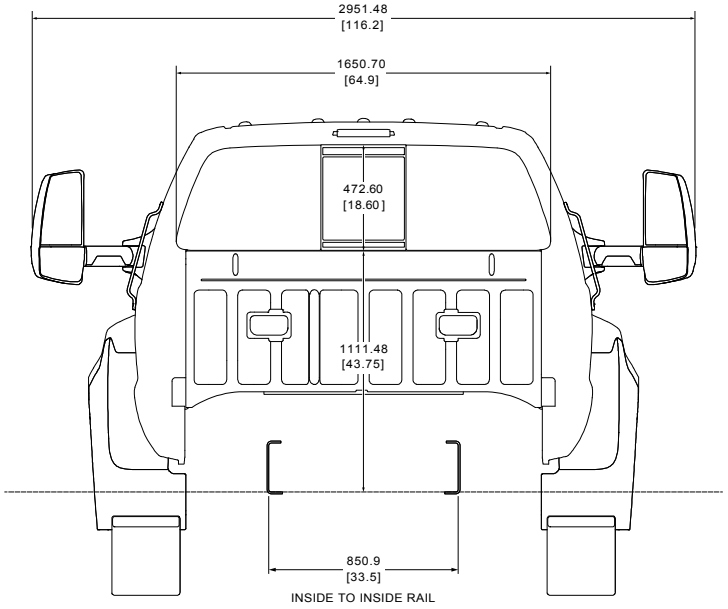
TIRE SIZE, LOAD RANGE (PR)	WHEEL WIDTH (in) & TYPE	MAXIMUM TIRE & WHEEL CAPACITY PER AXLE (lb) @ PSI	
		FRONT	REAR
255/70R22.5 H	7.50 in. 10 stud steel	11,020 @ 120 psi	20,280 @ 120 psi
	8.25 in. 10 stud steel	11,020 @ 120 psi	20,280 @ 120 psi
	8.25 in. 10 stud aluminum	11,020 @ 120 psi	20,280 @ 120 psi
275/80R22.5 G	7.50 in. 10 stud steel	12,350 @ 110 psi	22,700 @ 110 psi
	8.25 in. 10 stud steel	12,350 @ 110 psi	22,700 @ 110 psi
	8.25 in. 10 stud aluminum	12,350 @ 110 psi	22,700 @ 110 psi
275/80R22.5 H	7.50 in. 10 stud steel	14,330 @ 120 psi	26,455 @ 120 psi
	8.25 in. 10 stud steel	14,330 @ 120 psi	26,455 @ 120 psi
	8.25 in. 10 stud aluminum	14,330 @ 120 psi	26,455 @ 120 psi
295/80R22.5 H	7.50 in. 10 stud steel	15,660 @ 120 psi	27,760 @ 120 psi
	8.25 in. 10 stud steel	15,660 @ 120 psi	27,760 @ 120 psi
	8.25 in. 10 stud aluminum	15,660 @ 120 psi	27,760 @ 120 psi

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
TILT HOOD & BACK OF CAB



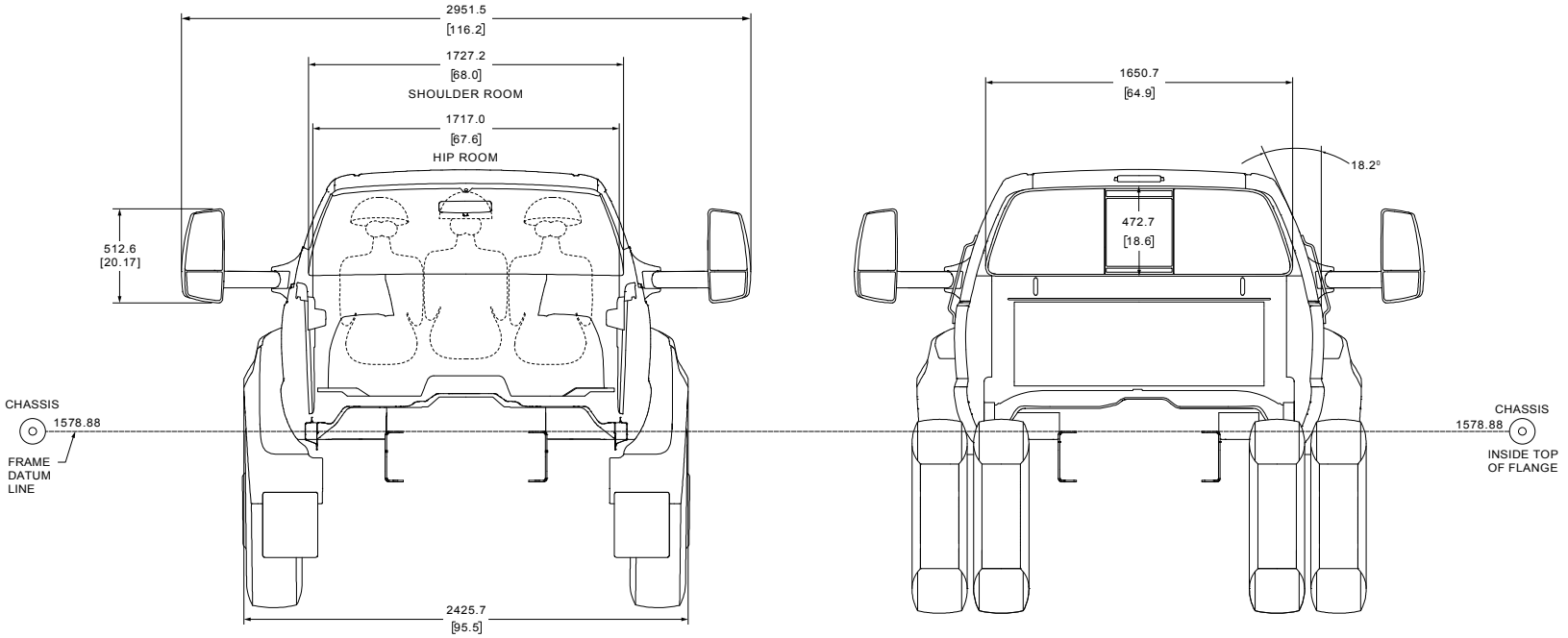
SIDE VIEW



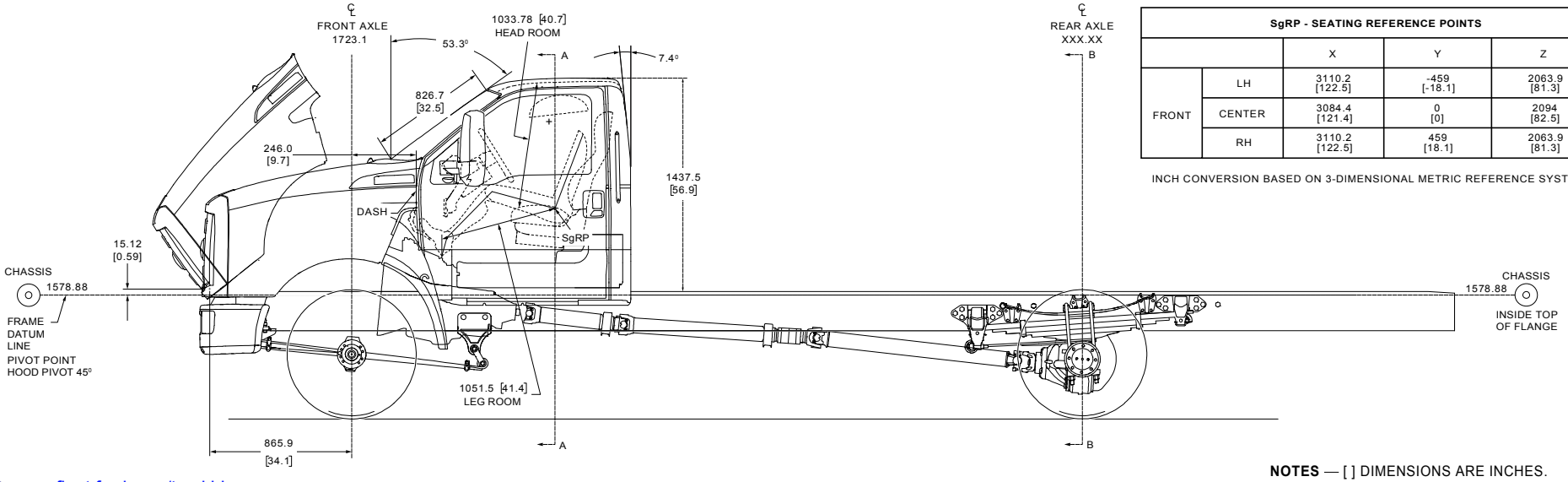
REAR VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
REGULAR CAB CHASSIS



SEC A SEC B

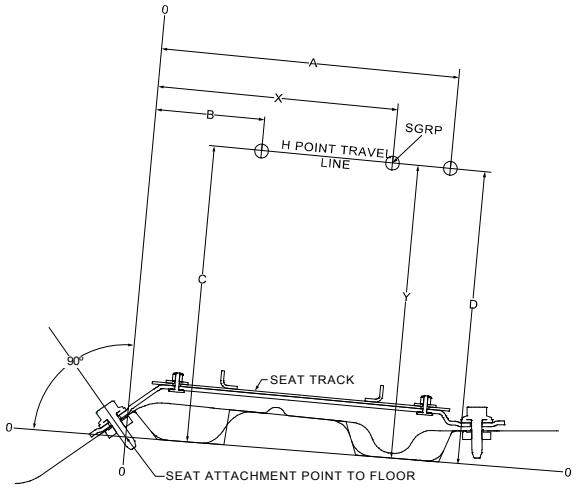


SgRP - SEATING REFERENCE POINTS				
		X	Y	Z
FRONT	LH	3110.2 [122.5]	-459 [-18.1]	2063.9 [81.3]
	CENTER	3084.4 [121.4]	0 [0]	2094 [82.5]
	RH	3110.2 [122.5]	459 [18.1]	2063.9 [81.3]

INCH CONVERSION BASED ON 3-DIMENSIONAL METRIC REFERENCE SYSTEM

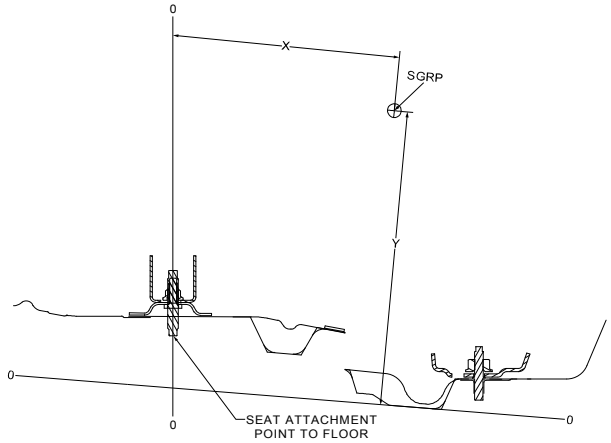
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
SEAT H POINT
ALL MODELS



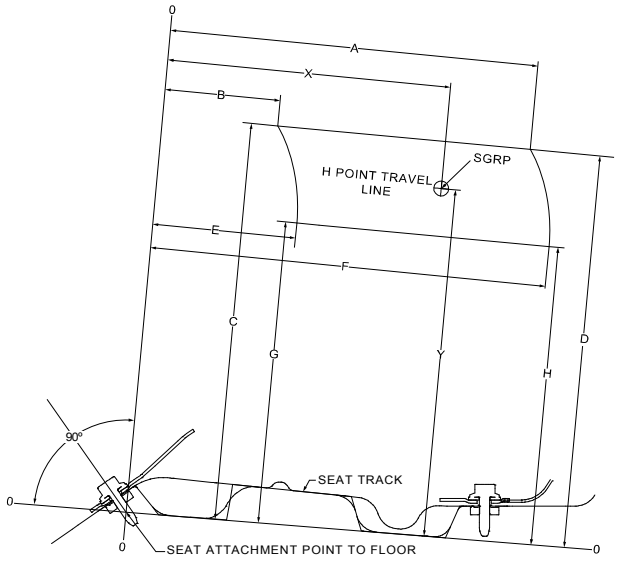
FRONT OF VEHICLE

2 WAY SEAT



FRONT OF VEHICLE

20 % 2 WAY SEAT



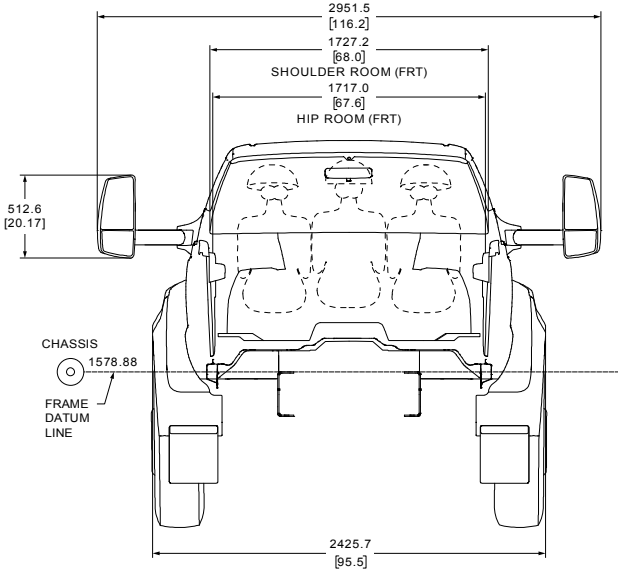
FRONT OF VEHICLE

MULTI - WAY SEAT

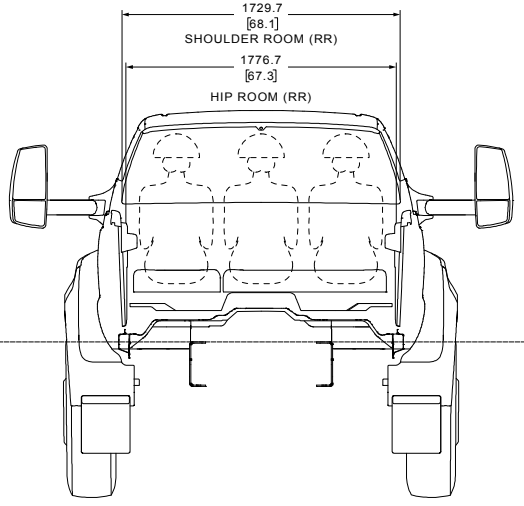
FORD F-650 & F-750 SEATING REFERENCE POINT (SRP)										
Seat Model	Seat Dimensions								SgRP Location	
	A	B	C	D	E	F	G	H	X	Y
2 Way 30% Seats	278.0	125.6	327.3	327.3	-	-	-	-	278.0	327.3
4 Way 30% Seats	343.5	191.1	369.4	369.4	191.1	343.5	293.0	293.0	343.5	344.3
Pass Bench 70% Seats	309.2	309.2	328.9	328.9	-	-	-	-	309.2	328.9
Driver 2 Way 40% Seats	334.4	132.1	329.1	337.4	-	-	-	-	272.8	334.9
Stationary Mode 20% Seats	-	-	-	-	-	-	-	-	227.4	313.5

NOTES — DIMENSIONS ARE IN MM

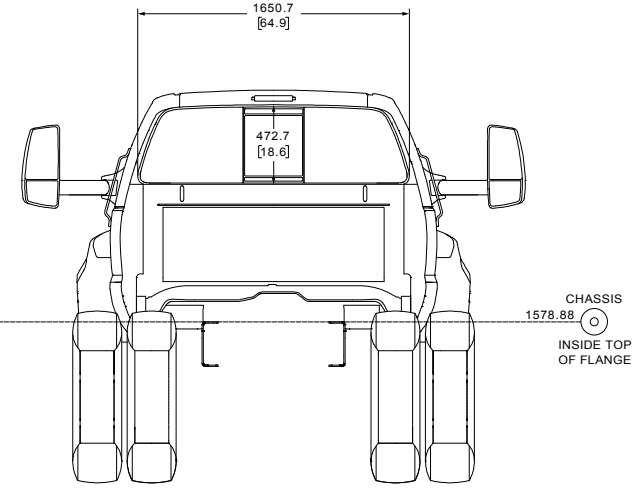
F650/750 SUPER DUTY
DIMENSIONAL DATA
SUPER CAB CHASSIS



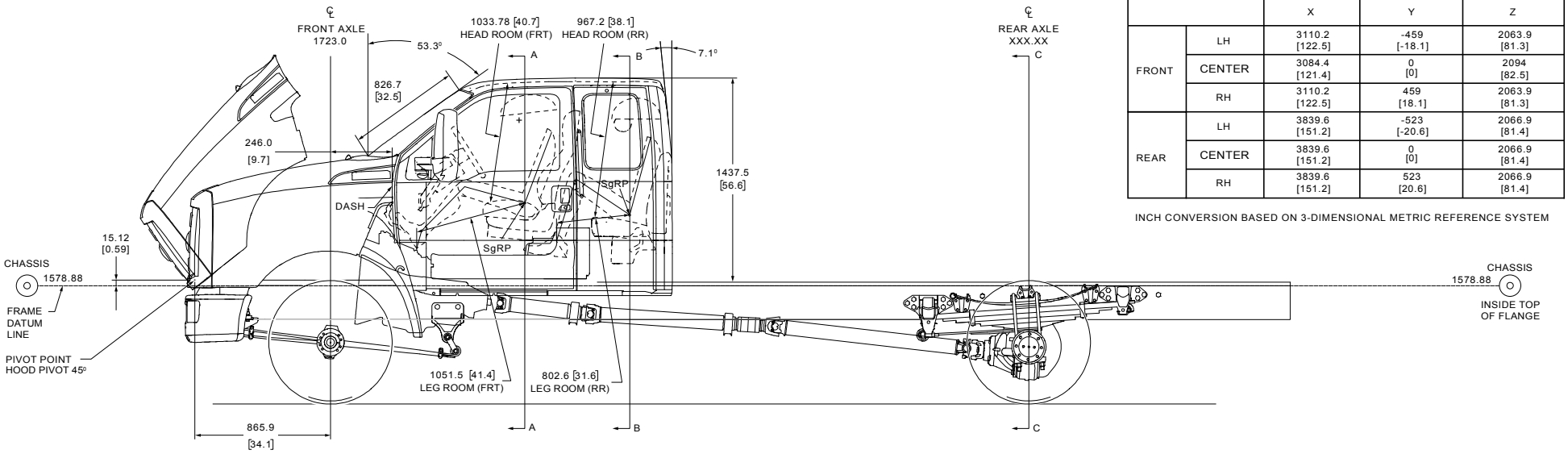
SEC A



SEC B



SEC C

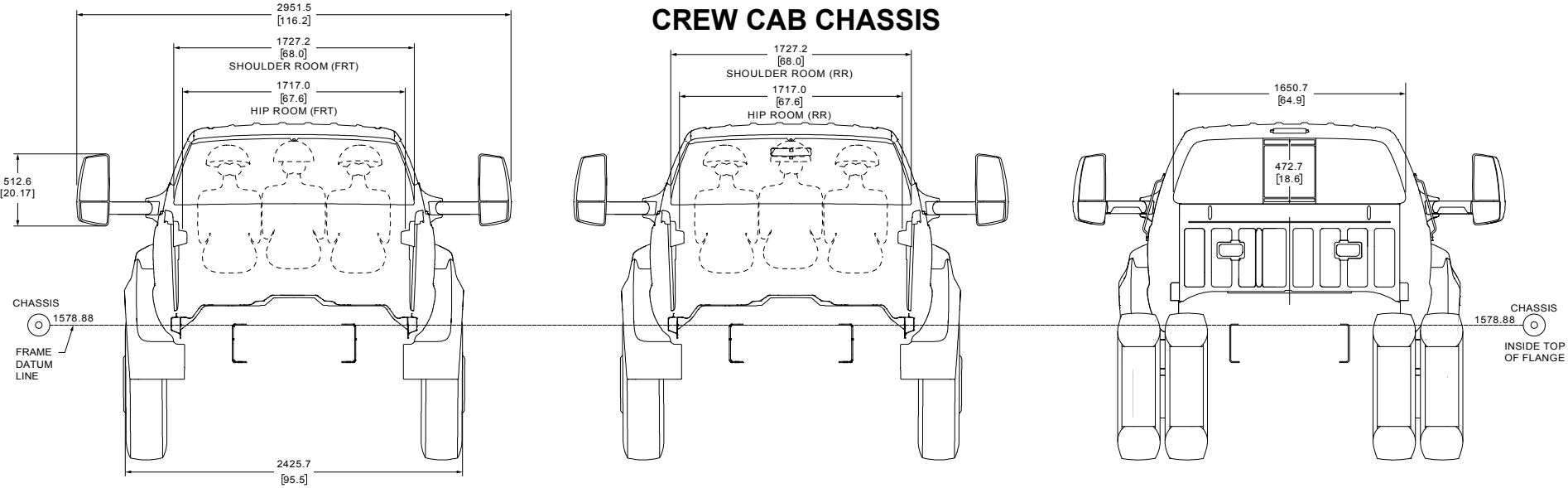


SgRP - SEATING REFERENCE POINTS				
		X	Y	Z
FRONT	LH	3110.2 [122.5]	-459 [-18.1]	2063.9 [81.3]
	CENTER	3084.4 [121.4]	0 [0]	2094 [82.5]
	RH	3110.2 [122.5]	459 [18.1]	2063.9 [81.3]
REAR	LH	3839.6 [151.2]	-523 [-20.6]	2066.9 [81.4]
	CENTER	3839.6 [151.2]	0 [0]	2066.9 [81.4]
	RH	3839.6 [151.2]	523 [20.6]	2066.9 [81.4]

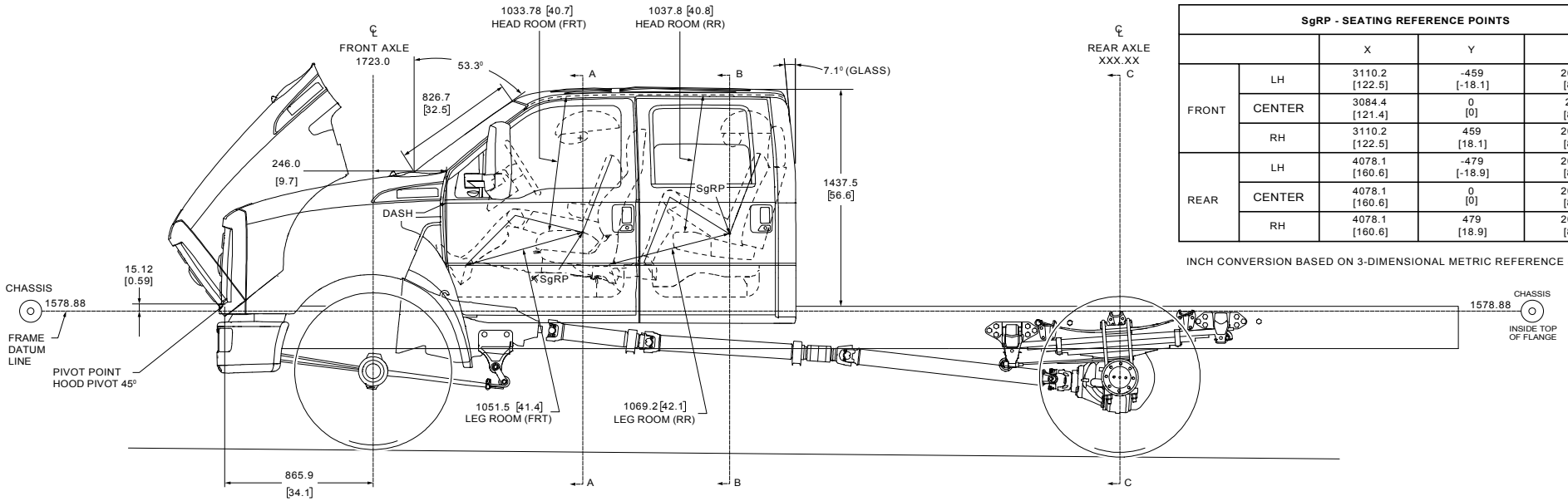
INCH CONVERSION BASED ON 3-DIMENSIONAL METRIC REFERENCE SYSTEM

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIMENSIONAL DATA
CREW CAB CHASSIS



SEC A SEC B SEC C

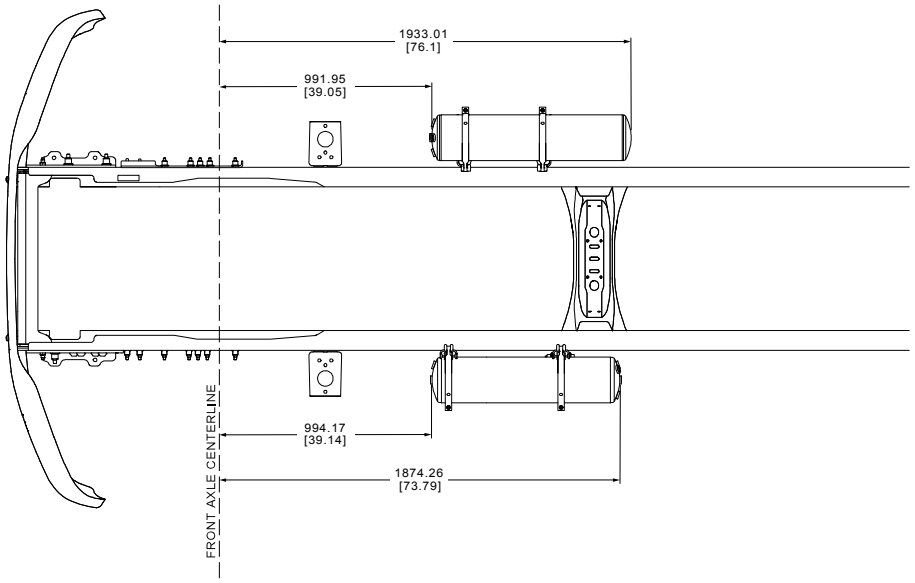


SgRP - SEATING REFERENCE POINTS				
		X	Y	Z
FRONT	LH	3110.2 [122.5]	-459 [-18.1]	2063.9 [81.3]
	CENTER	3084.4 [121.4]	0 [0]	2094 [82.5]
	RH	3110.2 [122.5]	459 [18.1]	2063.9 [81.3]
REAR	LH	4078.1 [160.6]	-479 [-18.9]	2063.9 [81.3]
	CENTER	4078.1 [160.6]	0 [0]	2063.9 [81.3]
	RH	4078.1 [160.6]	479 [18.9]	2063.9 [81.3]

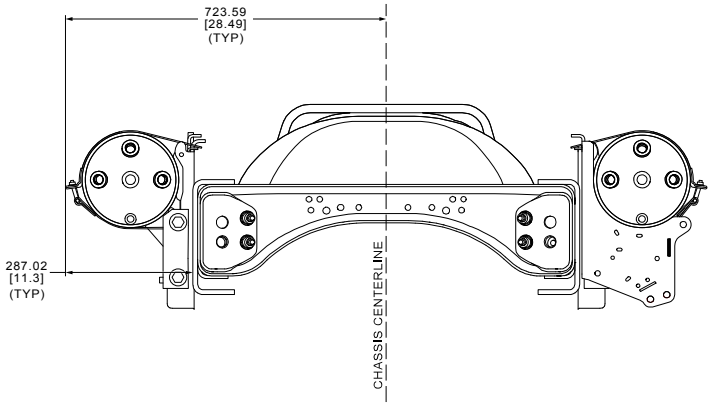
INCH CONVERSION BASED ON 3-DIMENSIONAL METRIC REFERENCE SYSTEM

NOTES — [ ] DIMENSIONS ARE INCHES.

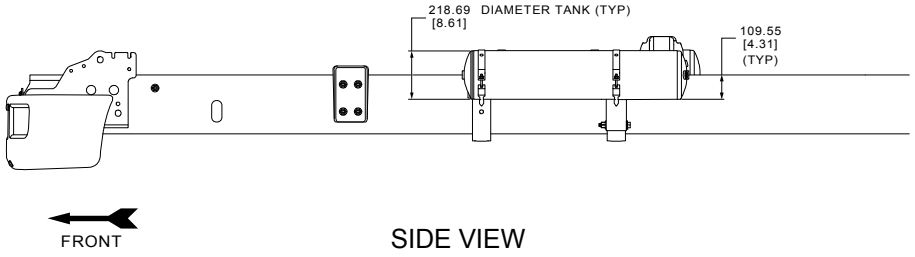
F650/750 SUPER DUTY
AIR TANK LOCATIONS
REGULAR CAB



TOP VIEW



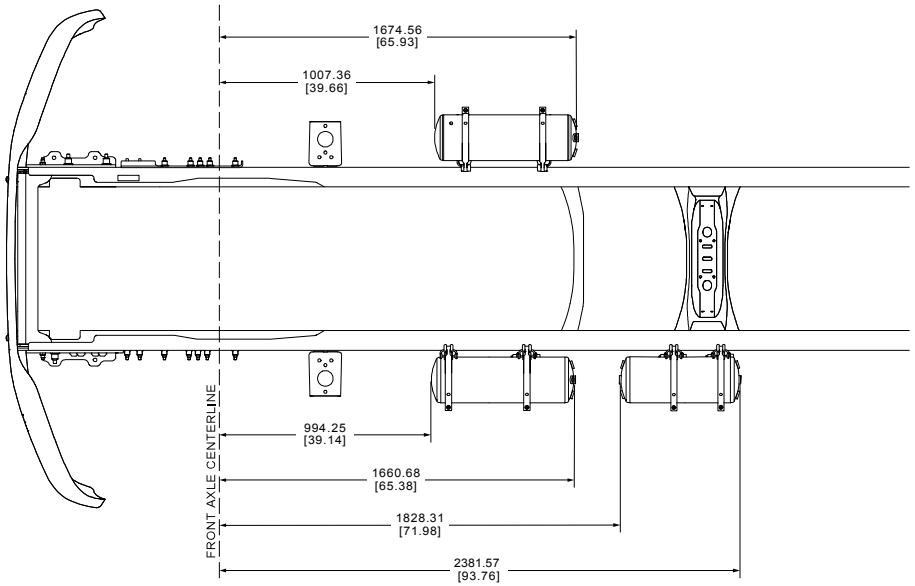
REAR VIEW



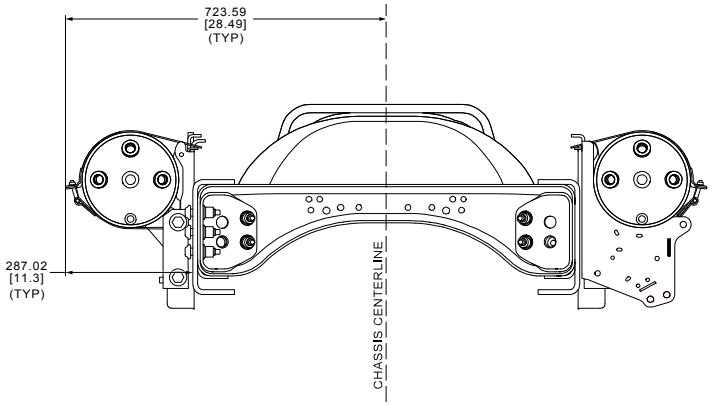
SIDE VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.
— BASED ON FRAME ORDER CODE 533.

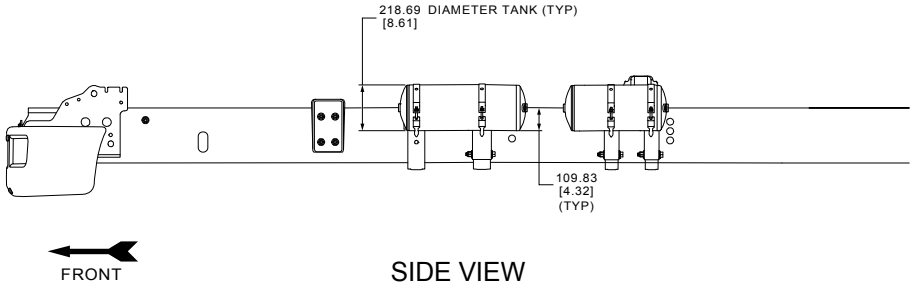
F650/750 SUPER DUTY
AIR TANK LOCATIONS
SUPER CAB



TOP VIEW



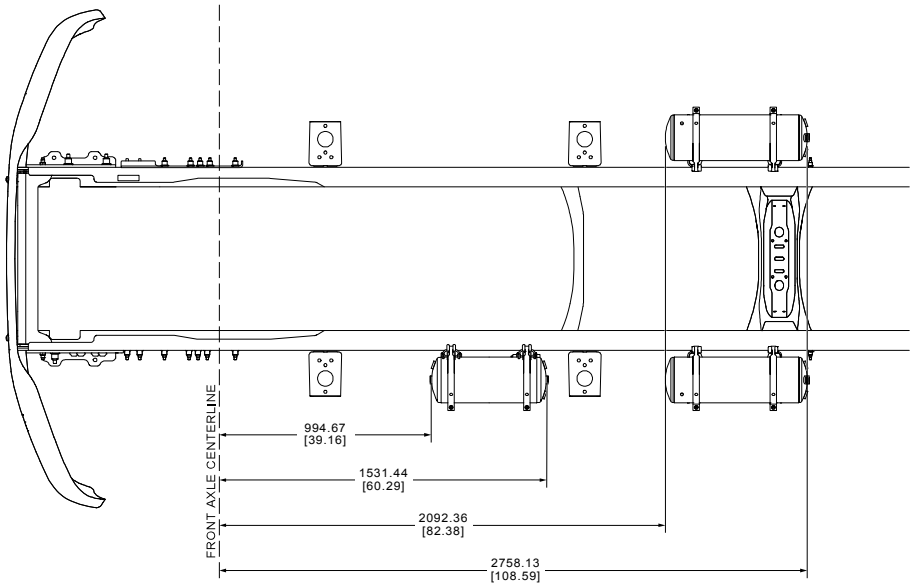
REAR VIEW



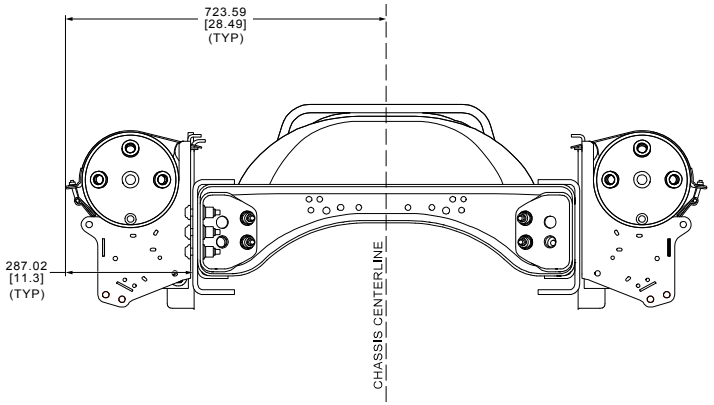
SIDE VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.
— BASED ON FRAME ORDER CODE 533.

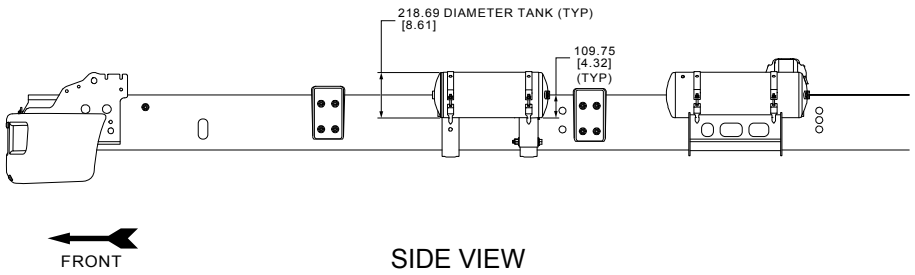
F650/750 SUPER DUTY
AIR TANK LOCATIONS
CREW CAB



TOP VIEW



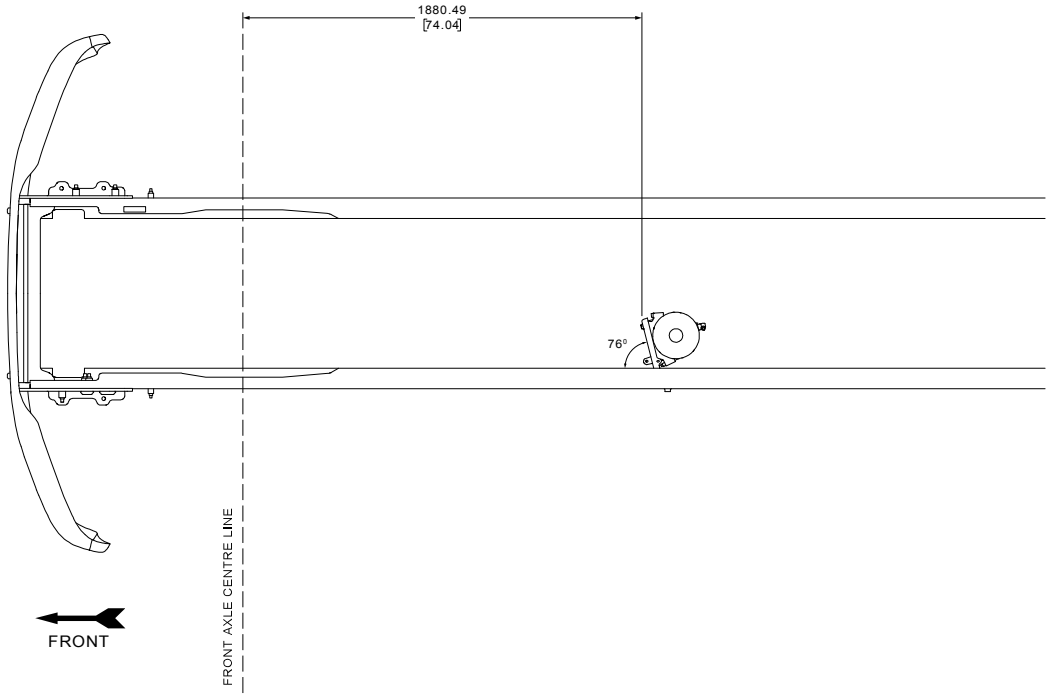
REAR VIEW



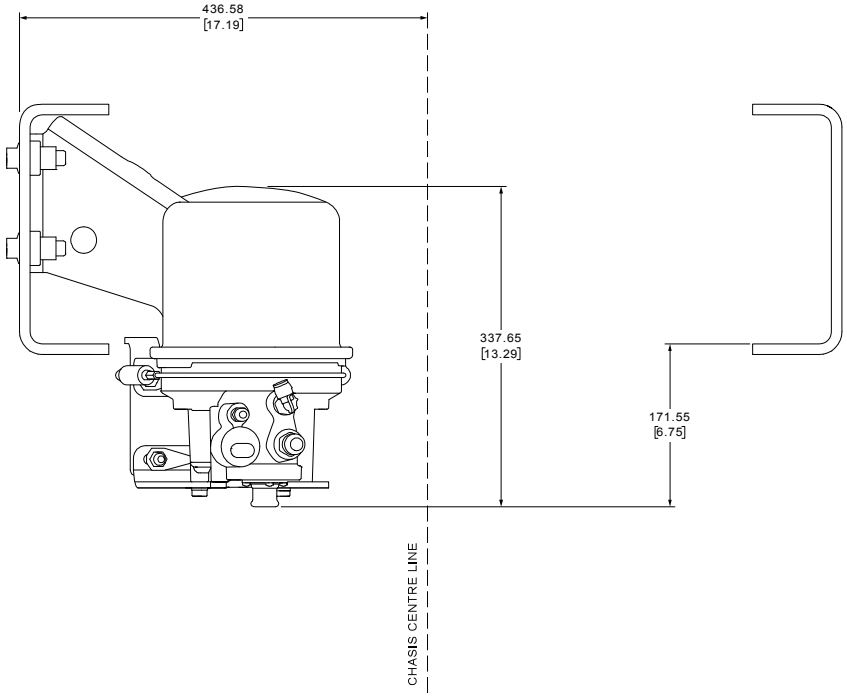
SIDE VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.
— BASED ON FRAME ORDER CODE 533.

F650/750 SUPER DUTY
AIR DRYER LOCATIONS



TOP VIEW – FRAME LOCATIONS



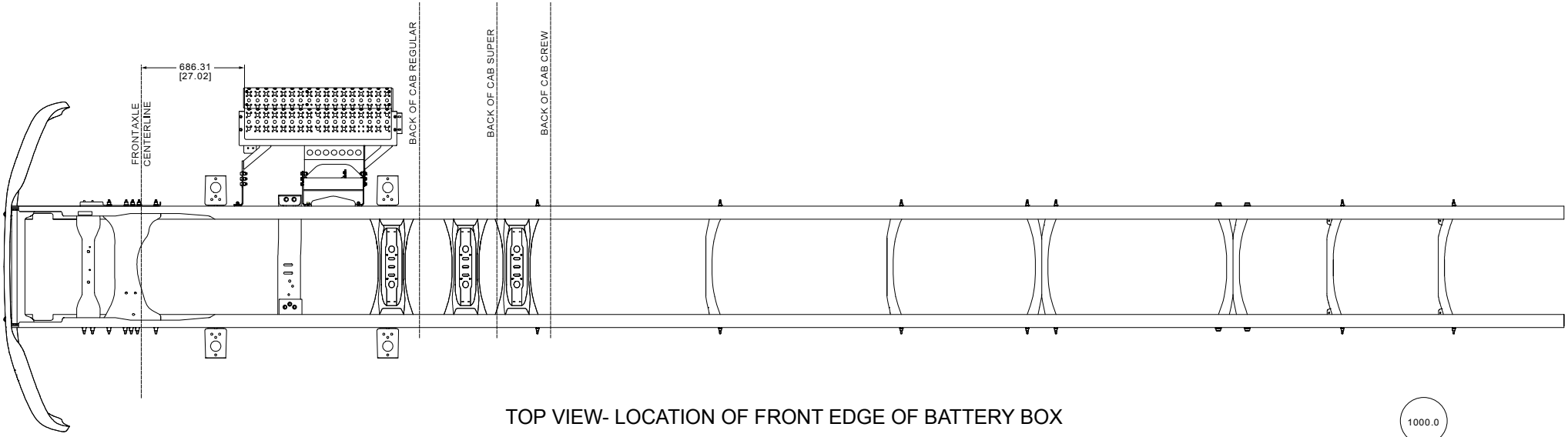
REAR VIEW – INSIDE / OUTSIDE
FRAME RAIL DIMENSIONS

NOTES — [ ] DIMENSIONS ARE INCHES.

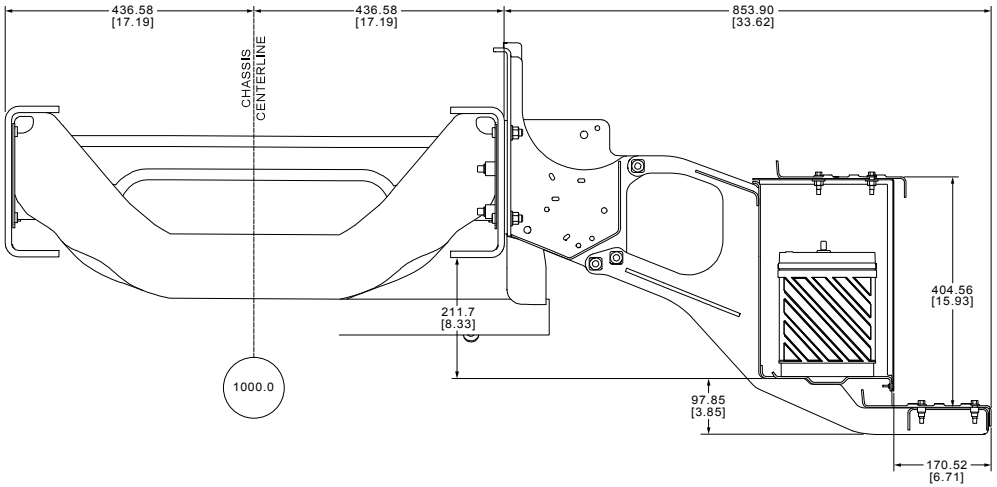
29
F650/750

F650/750 SUPER DUTY
BATTERY BOX LOCATION
DIESEL ENGINE

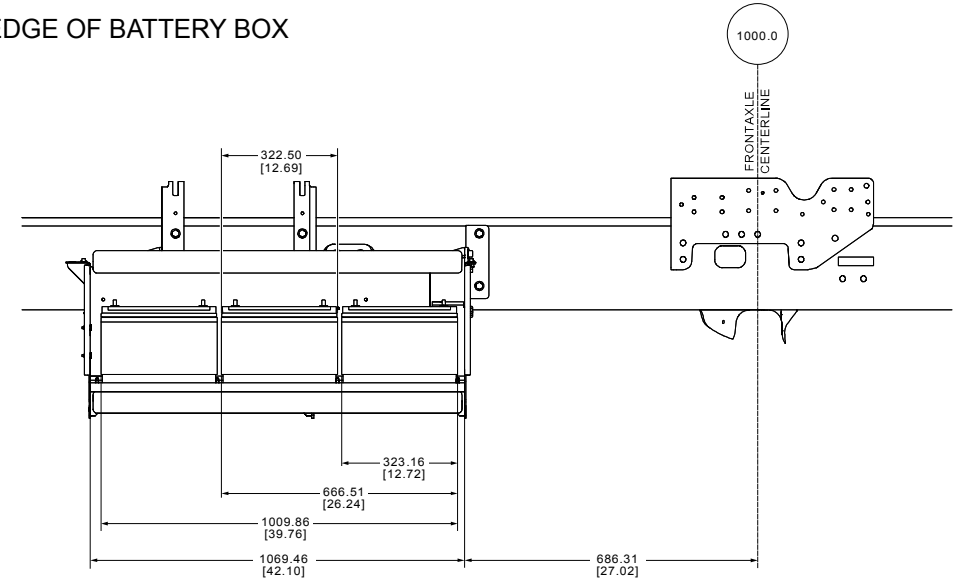
2018
MODEL YEAR



TOP VIEW- LOCATION OF FRONT EDGE OF BATTERY BOX



REAR VIEW - OUTSIDE FRAME RAIL DIMENSIONS



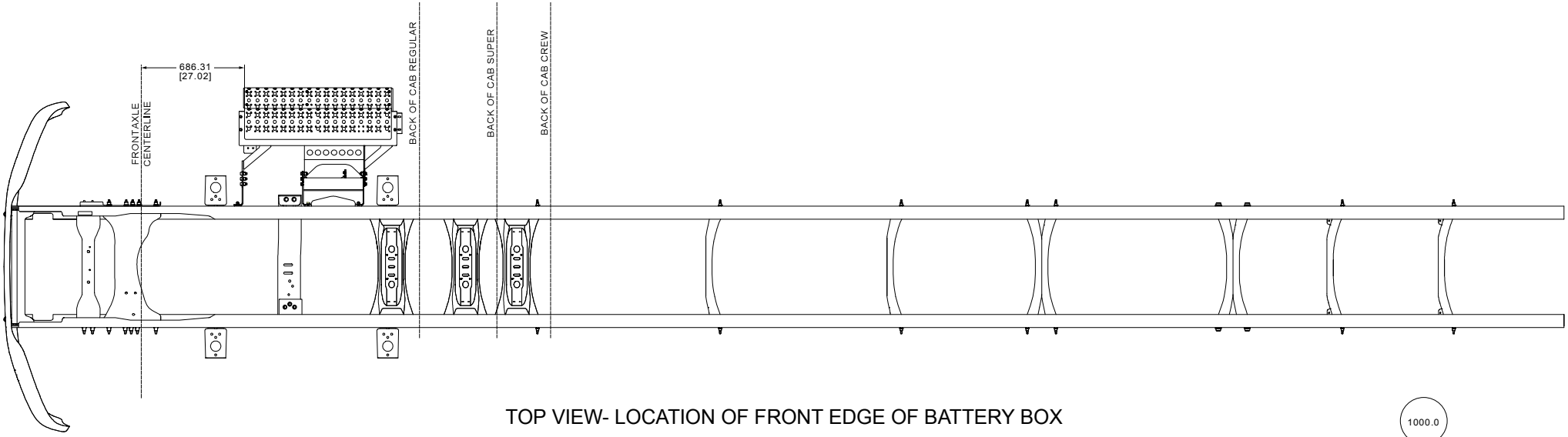
SIDE VIEW - OUTSIDE FRAME RAIL DIMENSIONS

NOTES — [ ] DIMENSIONS ARE INCHES.

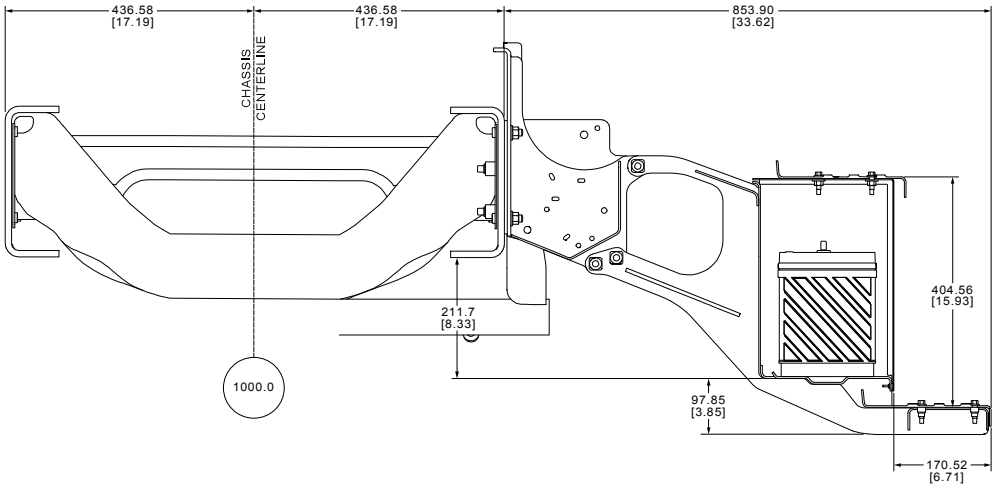
30
F650/750

F650/750 SUPER DUTY
BATTERY BOX LOCATION
GASOLINE ENGINE

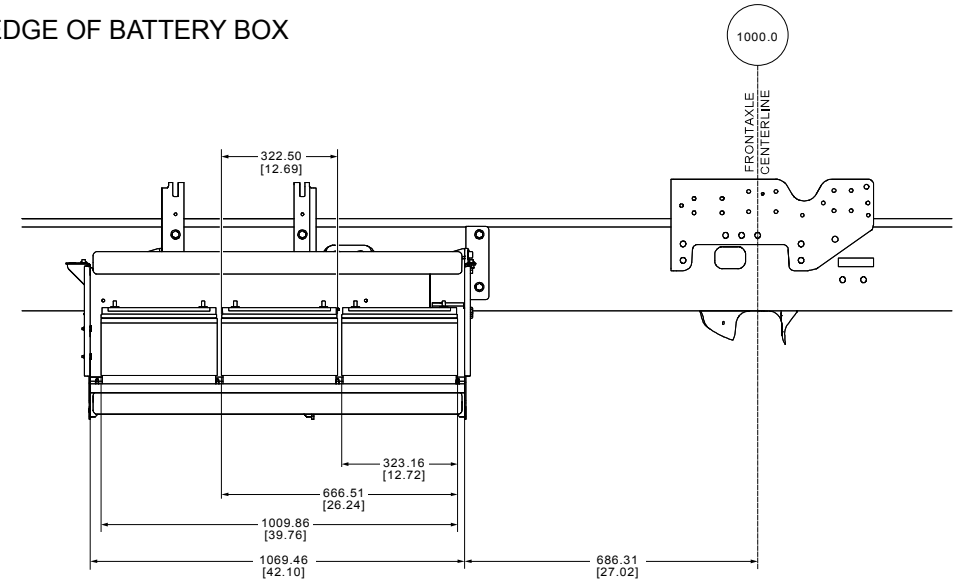
2018
MODEL YEAR



TOP VIEW- LOCATION OF FRONT EDGE OF BATTERY BOX



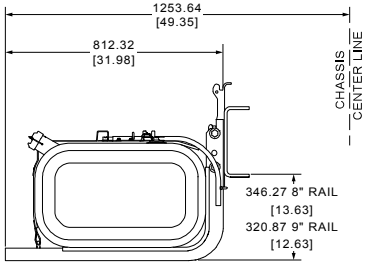
REAR VIEW - OUTSIDE FRAME RAIL DIMENSIONS



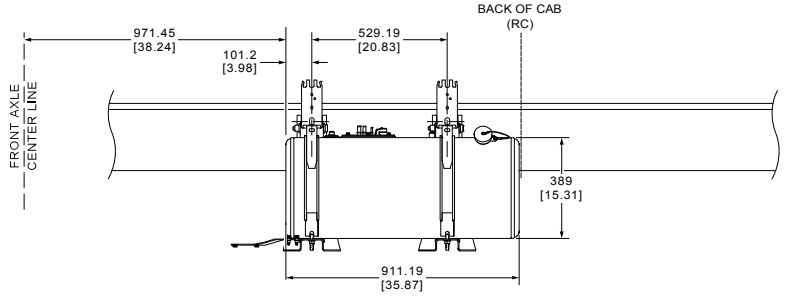
SIDE VIEW - OUTSIDE FRAME RAIL DIMENSIONS

NOTES — [ ] DIMENSIONS ARE INCHES.

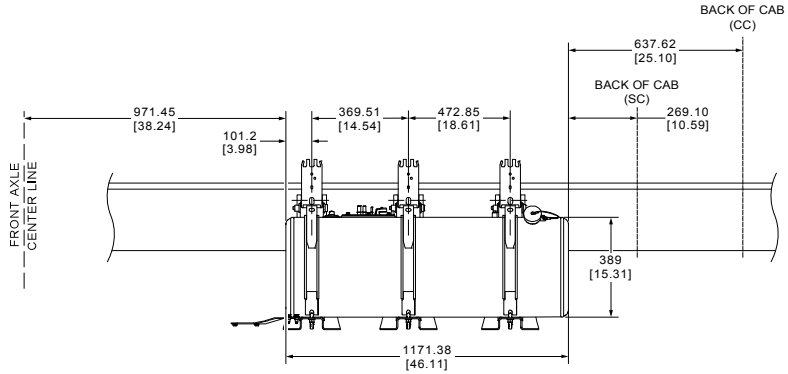
F650/750 SUPER DUTY
DIESEL FUEL TANK LOCATIONS
LEFT SIDE MOUNTING



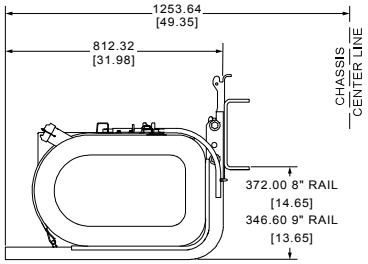
REAR VIEW: 15" DEEP 50/65 GALLON TANK



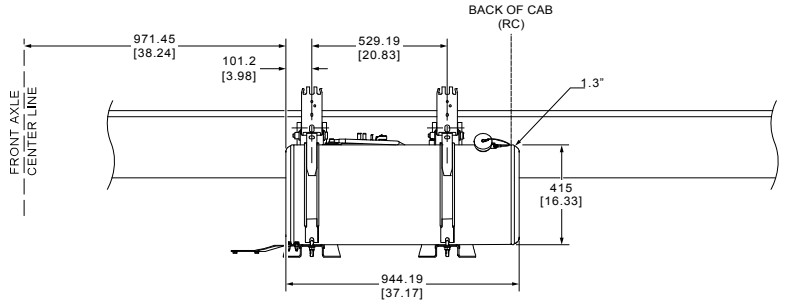
SIDE VIEW: 15" DEEP 50 GALLON TANK (REGULAR CAB)



SIDE VIEW: 15" DEEP 65 GALLON TANK (SC & CC)



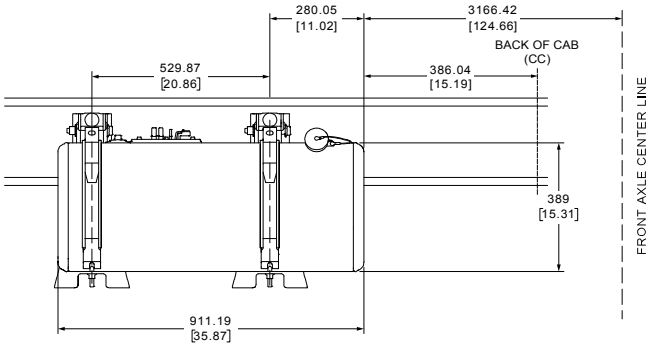
REAR VIEW: 16" DEEP 55 GALLON TANK



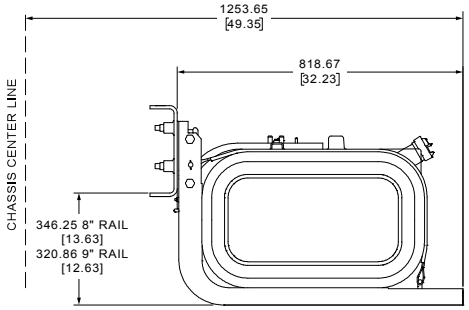
SIDE VIEW: 16" DEEP 55 GALLON TANK (REGULAR CAB)

NOTES — [ ] DIMENSIONS ARE INCHES.

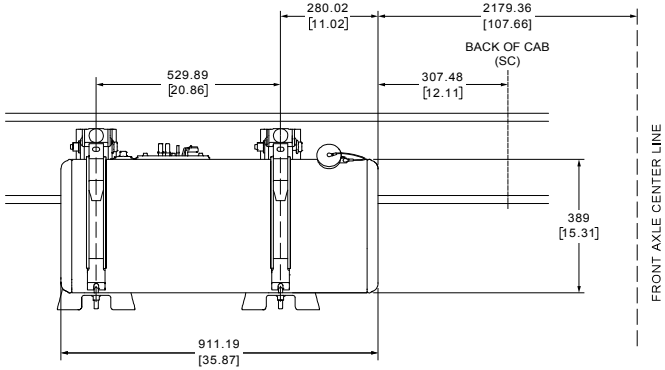
F650/750 SUPER DUTY
DIESEL FUEL TANK LOCATIONS
RIGHT SIDE MOUNTING
*FOR DUAL TANKS ONLY



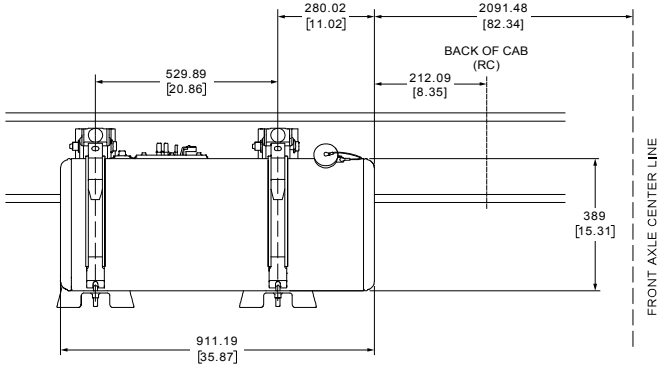
SIDE VIEW: 15" DEEP 50 GALLON TANK (CREW CAB)



REAR VIEW: 15" DEEP 50 GALLON TANK (CC , SC & RC)



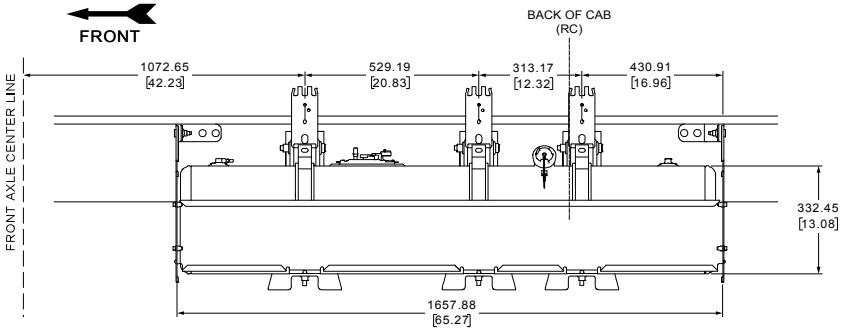
SIDE VIEW: 15" DEEP 50 GALLON TANK (SUPER CAB)



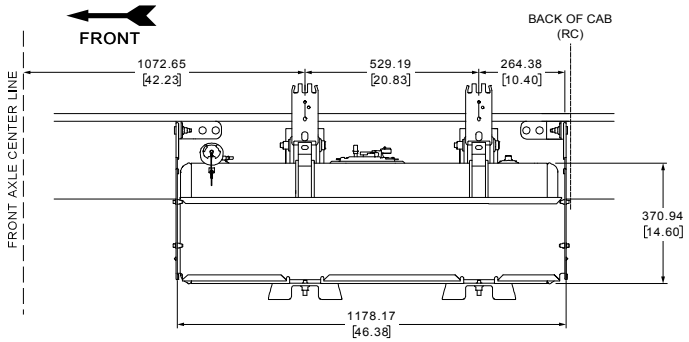
SIDE VIEW: 15" DEEP 50 GALLON TANK (REGULAR CAB)

NOTES — [ ] DIMENSIONS ARE INCHES.

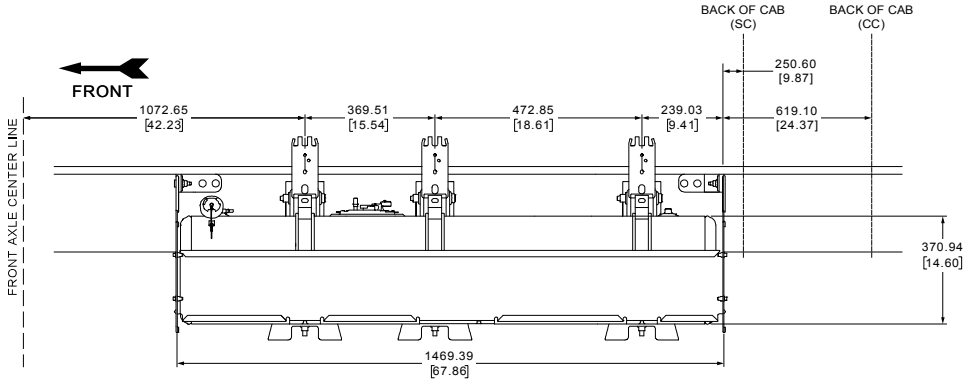
F650/750 SUPER DUTY
GASOLINE FUEL TANK LOCATIONS
LEFT SIDE MOUNT UNDER CAB



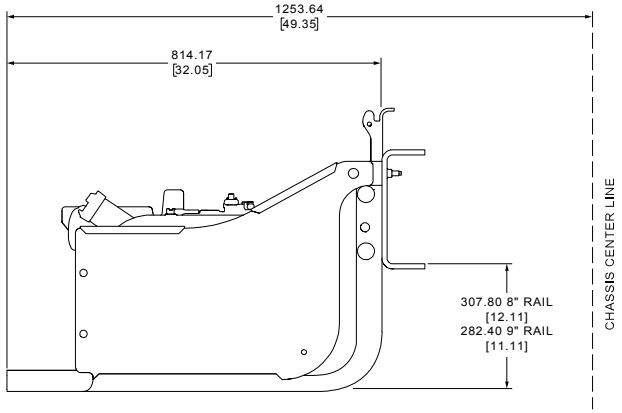
SIDE VIEW – 13" DEEP 60 GALLON TANK (REGULAR CAB)



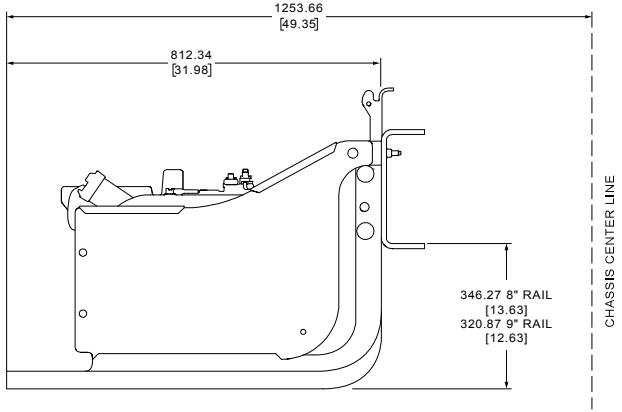
SIDE VIEW – 14" DEEP 50 GALLON TANK (REGULAR CAB)



SIDE VIEW – 14" DEEP 60 GALLON TANK (SC & CC)



REAR VIEW – 13" DEEP 60 GALLON TANK (REGULAR CAB)

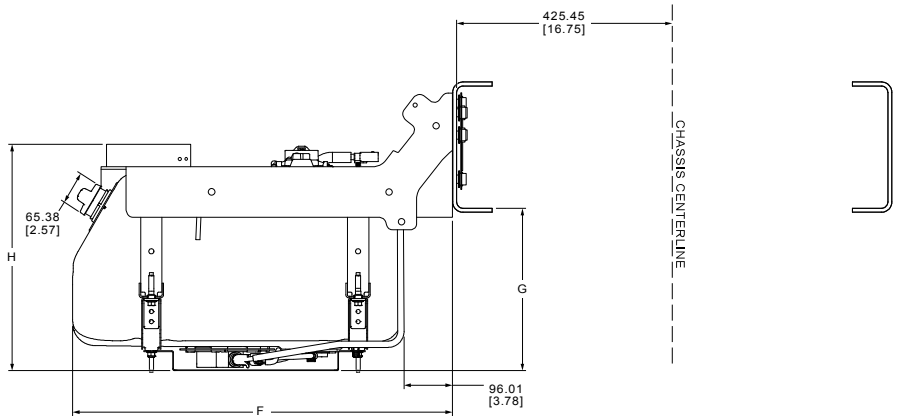


REAR VIEW – 14" DEEP 50/60 GALLON TANK

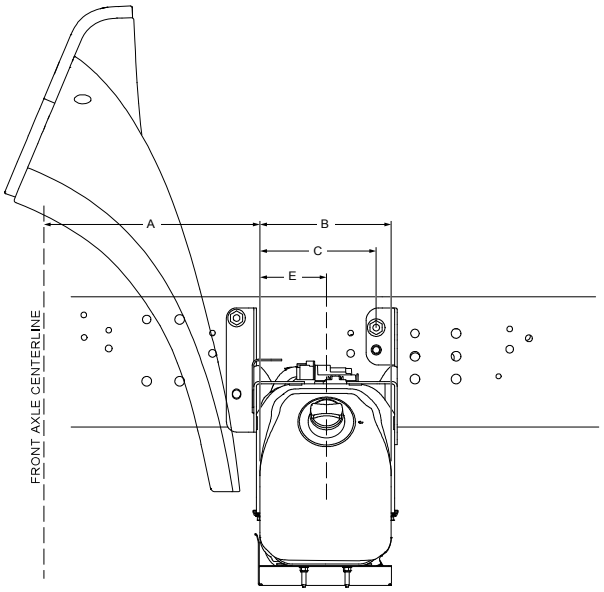
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIESEL EXHAUST FLUID (UREA) TANK LOCATIONS
ALL MODELS

DEF (Urea) Tank Dimension Description	Dimension	View(s)	All Cab
DEF tank capacity(fuel tank depth) / mounting side			8 Gal/ RSM
Front axle CL to forward face of tank / box	A	Top	684.6 / 27"
Width of tank / box	B	L	259.0 / 10.2"
Forward face to CL frame hole	C	L	229.5 / 9.0"
CL bracket (frame hole) to bracket (frame hole)	D	Rear	275.6 / 10.9"
Forward face to fill neck CL	E	Top	129.5 / 5.1"
O/S frame to O/S tank / box	F	Rear	748.2 / 29.5"
1000 to bottom of tank / box	G	Rear	For 8.5 in Deep Frame 345.8 / 13.6" For 9.5 in Deep Frame 320.4 / 12.6"
Bottom of tank / box to top of tank / box	H	Rear	446.4 / 17.6"



REAR VIEW

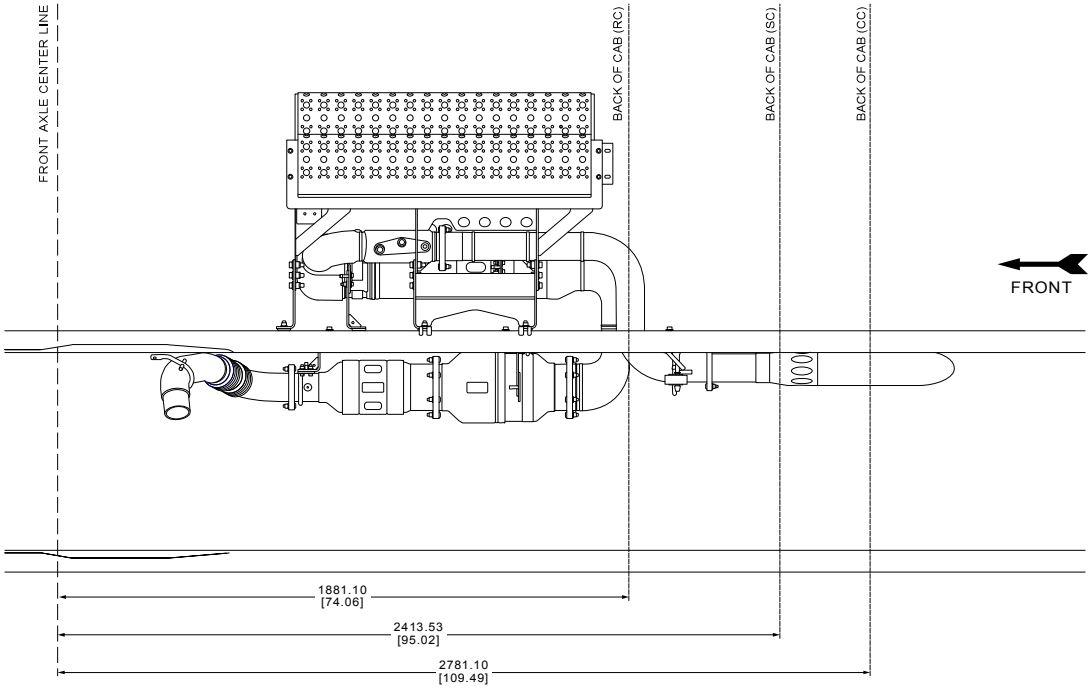


SIDE VIEW

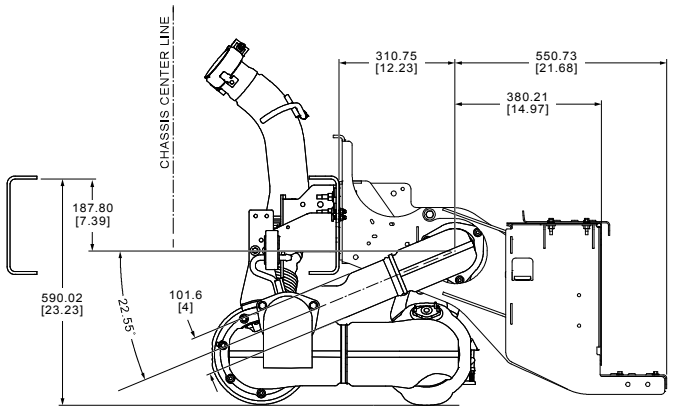
CAUTION: Ford Motor Company does not approve of relocating any components of the Diesel Exhaust Fluid (DEF) system and/or the exhaust system

NOTES — [ ] DIMENSIONS ARE INCHES.

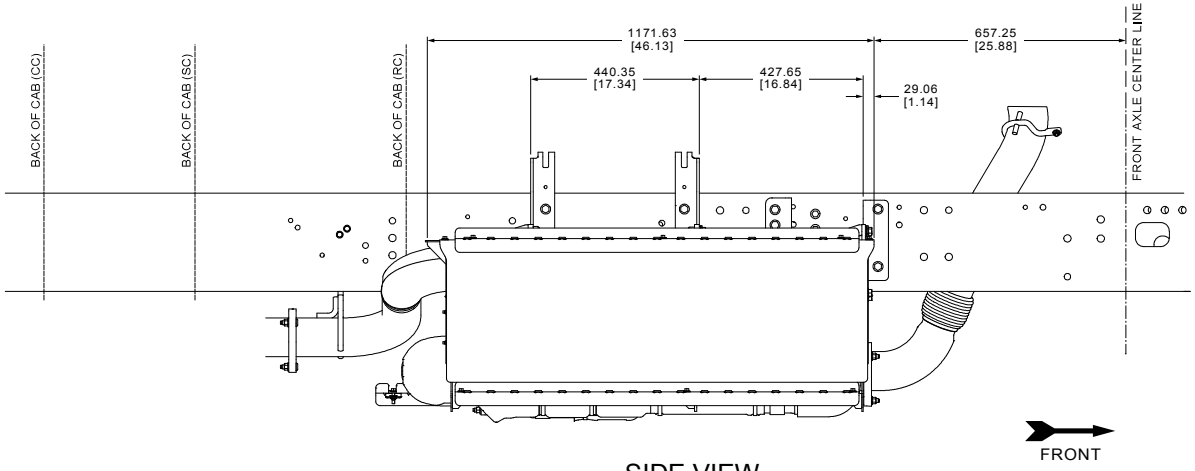
F650/750 SUPER DUTY
DIESEL EXHAUST SYSTEMS
HORIZONTAL SWITCHBACK



TOP VIEW



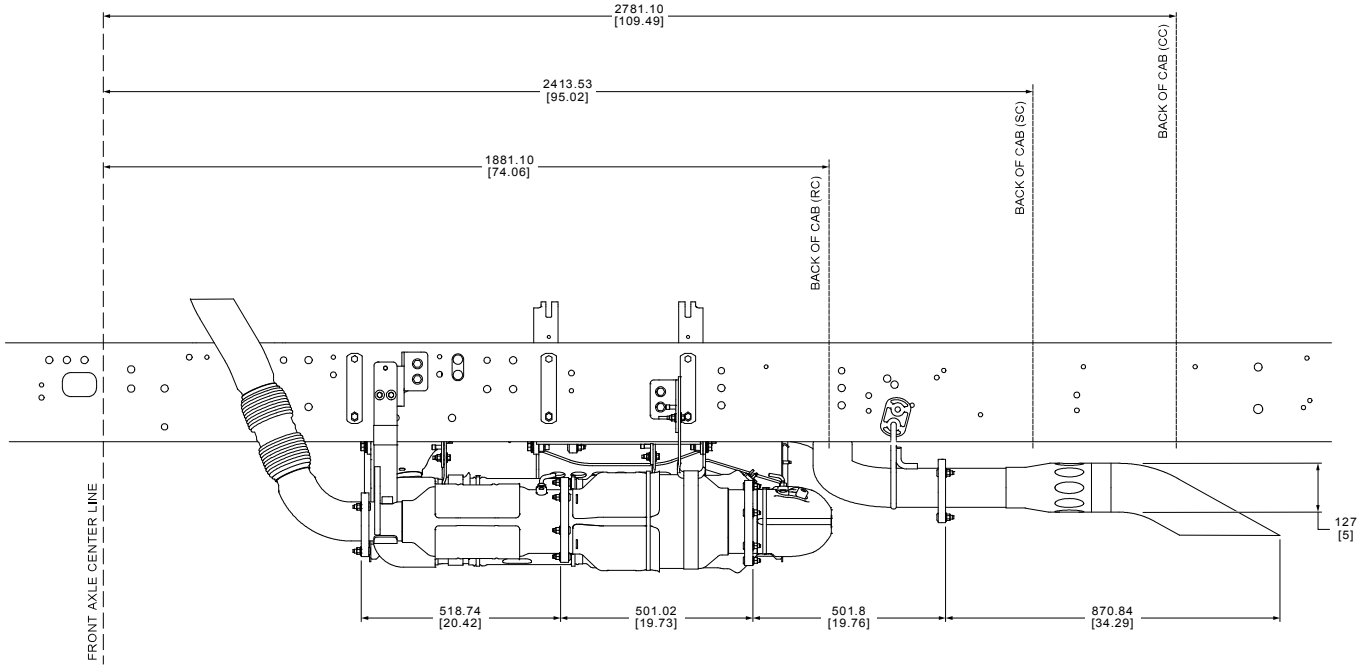
REAR VIEW



SIDE VIEW

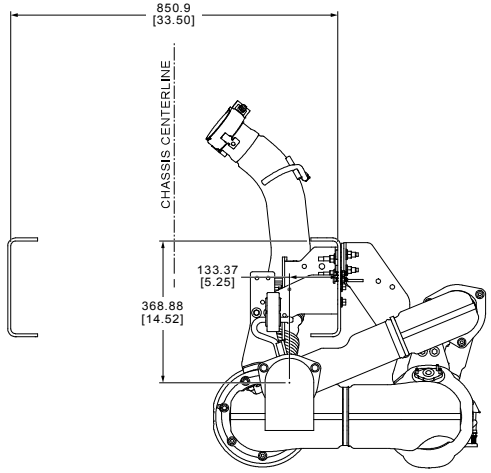
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIESEL EXHAUST SYSTEMS
HORIZONTAL SWITCHBACK (Cont'd)



FRONT

SIDE VIEW



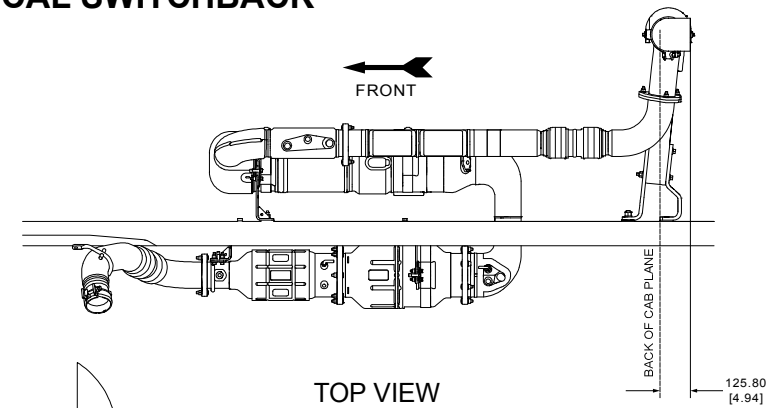
REAR VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.

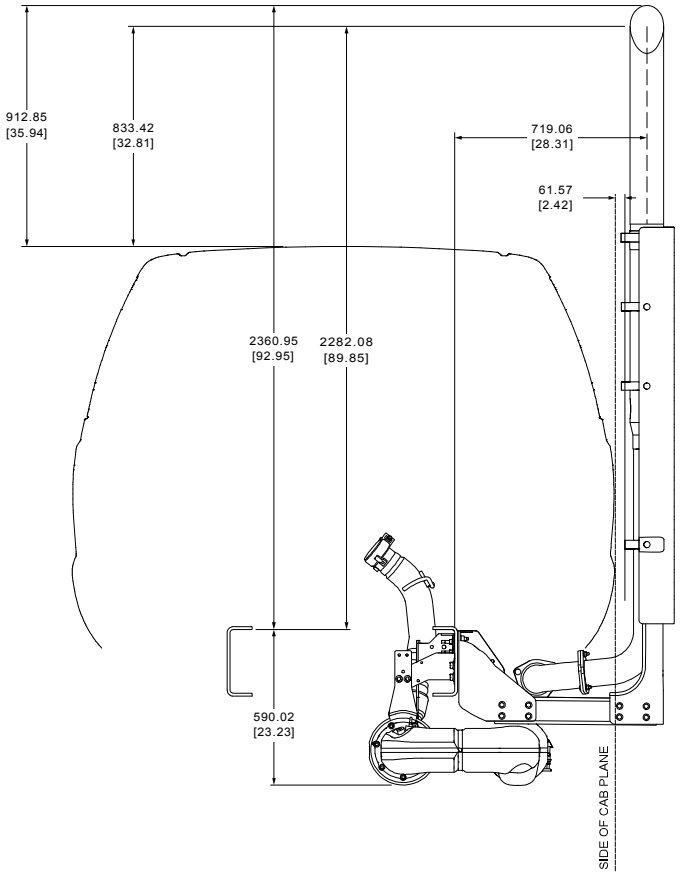
F650/750 SUPER DUTY
DIESEL EXHAUST SYSTEM
6.7L VERTICAL SWITCHBACK

CENTER LINE OF FRONT AXLE TO REAR VERTICAL STACK BRACKET

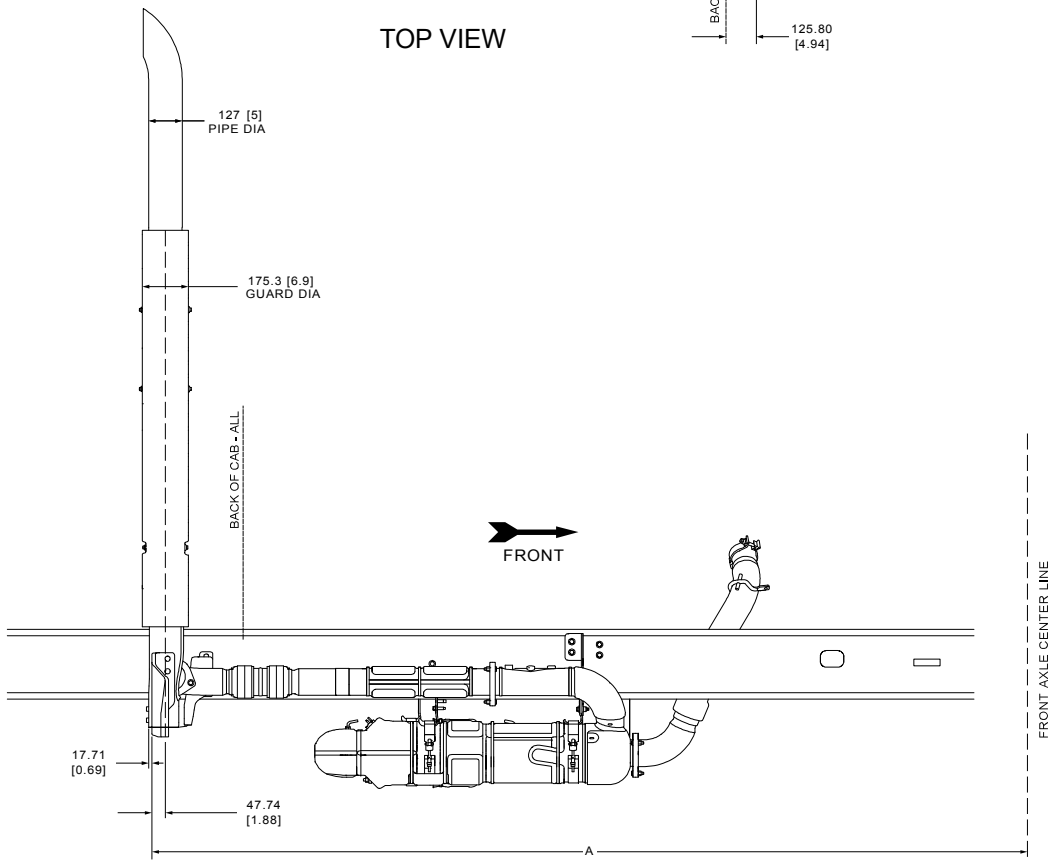
Dimension	Regular Cab	Super Cab	Crew Cab
A	1971.91 [77.63]	2503.37 [98.55]	2871.93 [113.07]



TOP VIEW



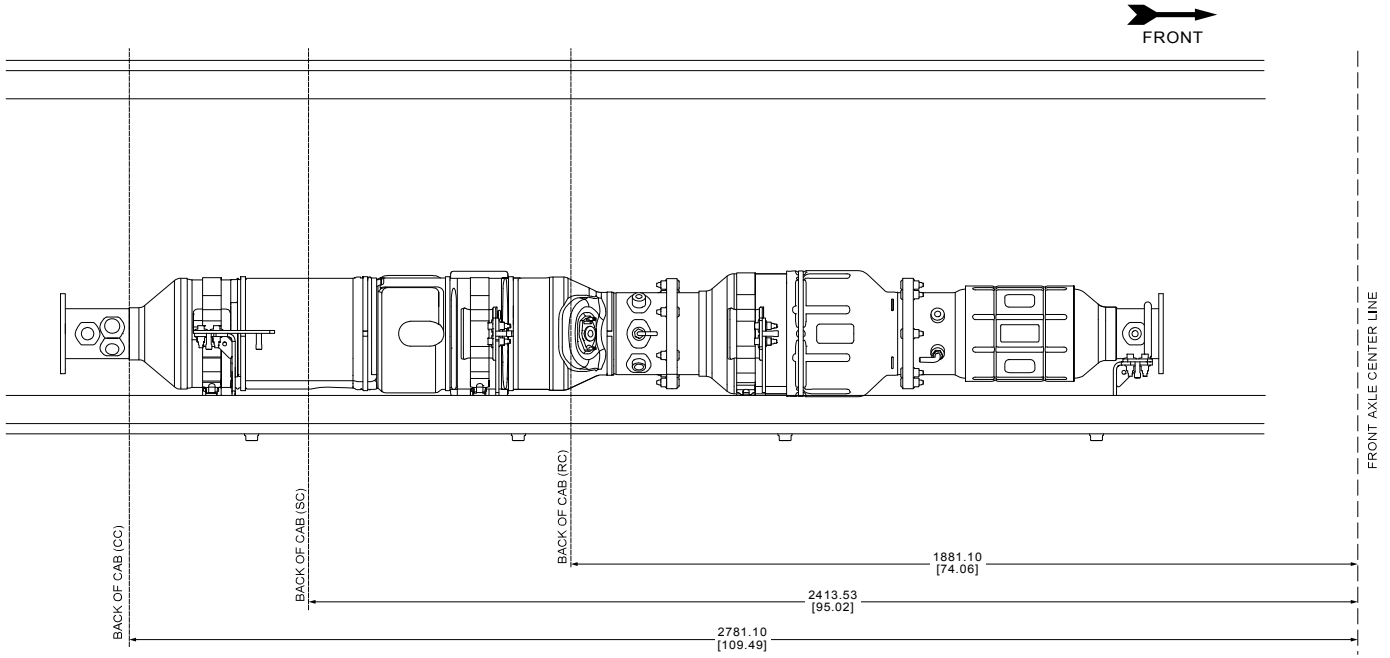
REAR VIEW



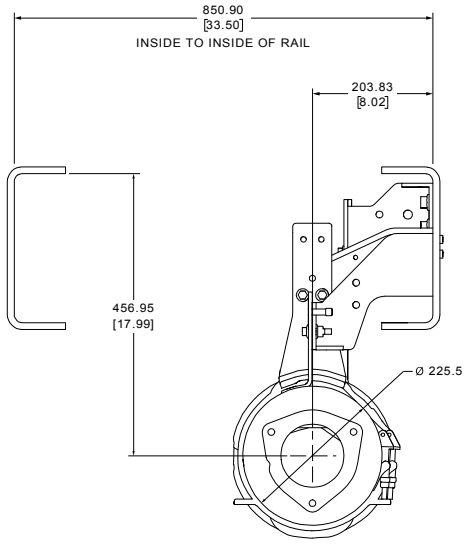
SIDE VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.

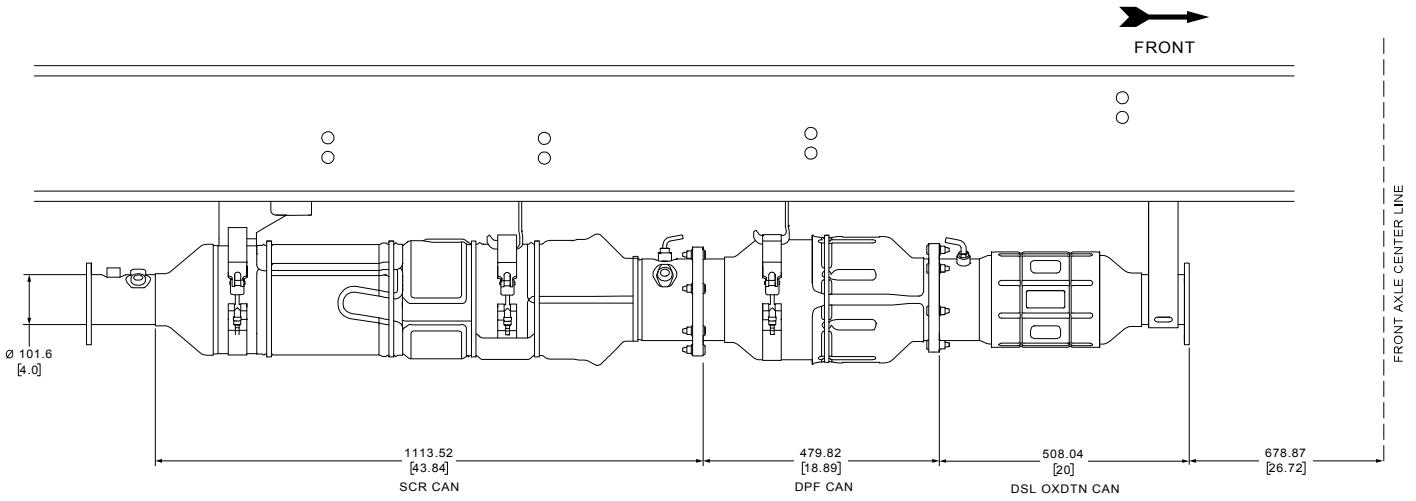
F650/750 SUPER DUTY
DIESEL EXHAUST SYSTEMS
6.7L INLINE



TOP VIEW - COMMON TO ALL INLINE EXHAUSTS



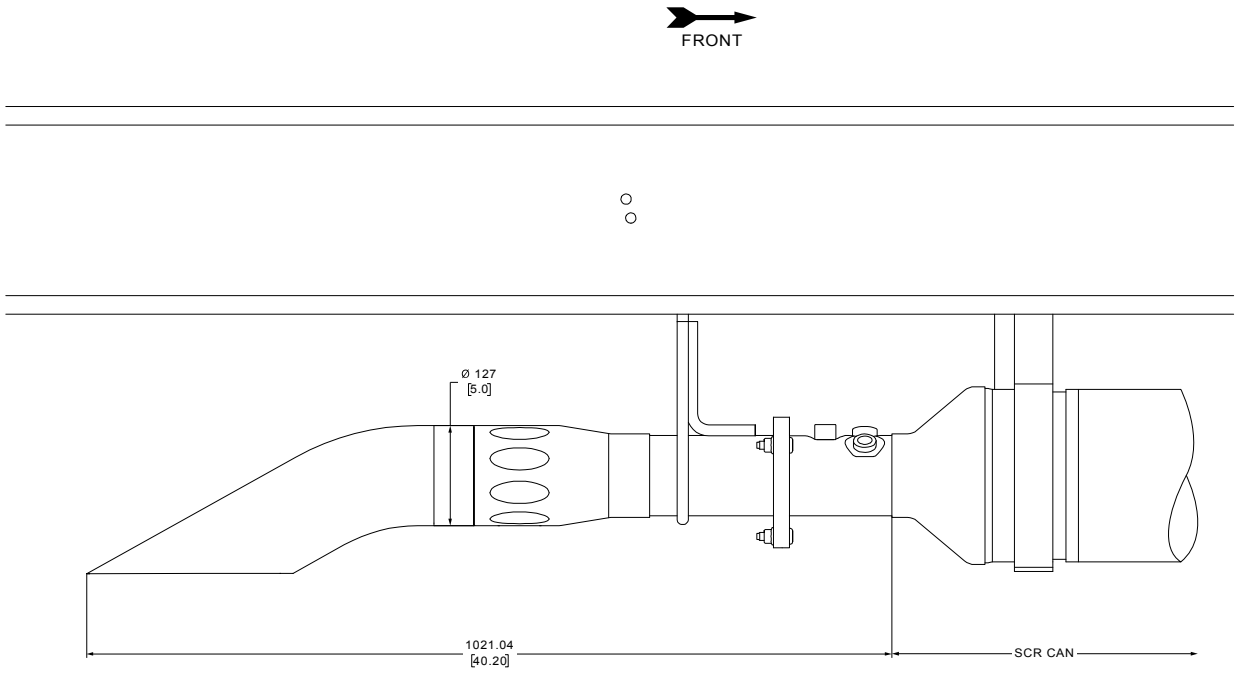
REAR VIEW - COMMON
TO ALL INLINE EXHAUSTS



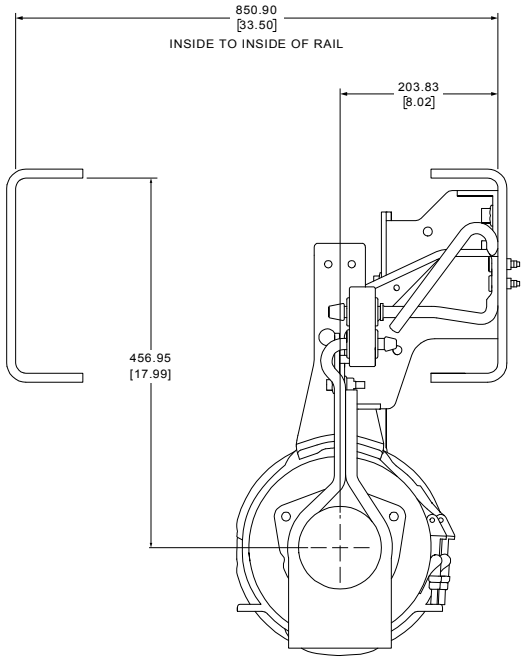
RH SIDE VIEW - COMMON TO ALL INLINE EXHAUSTS

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
DIESEL EXHAUST SYSTEMS
6.7L INLINE (Cont'd)



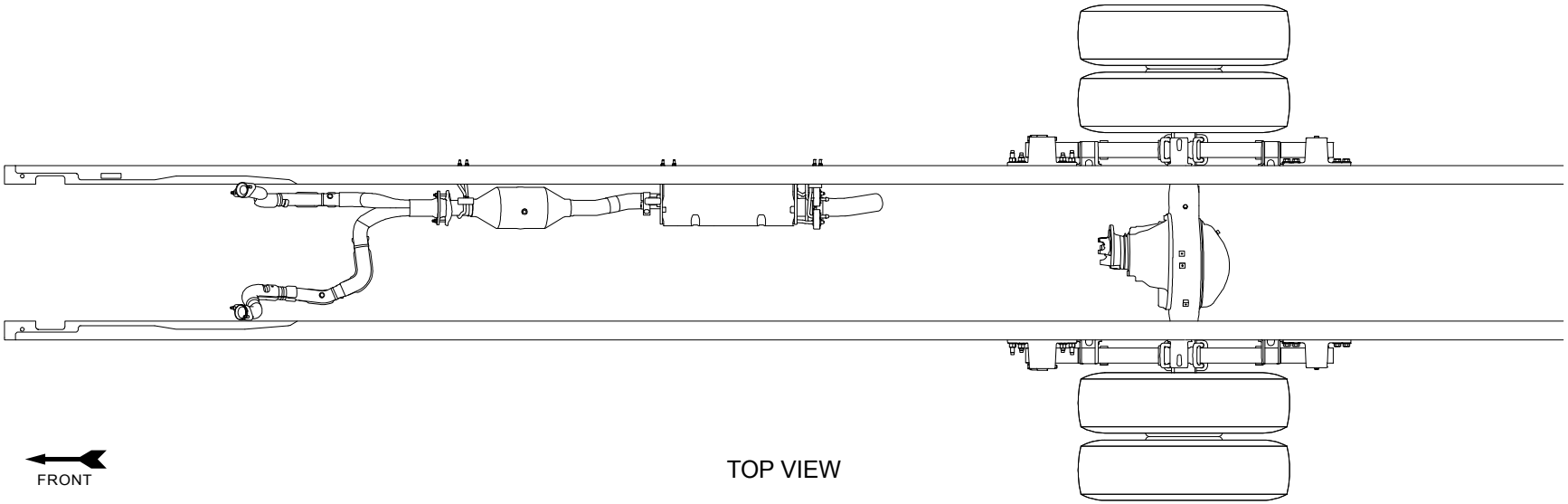
LEFT SIDE VIEW – RIGHT SIDE EXIT BEFORE REAR AXLE



REAR VIEW - RIGHT SIDE
EXIT BEFORE REAR AXLE

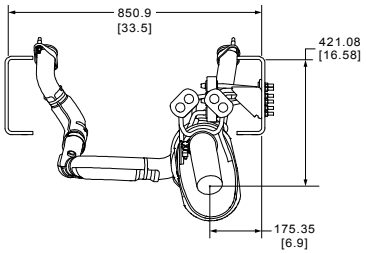
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
GASOLINE EXHAUST SYSTEM
HORIZONTAL INLINE
(REGULAR & CREW CAB)

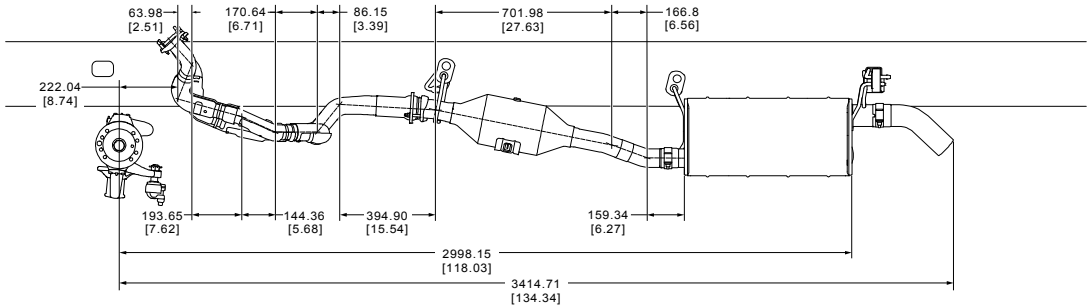


FRONT

TOP VIEW



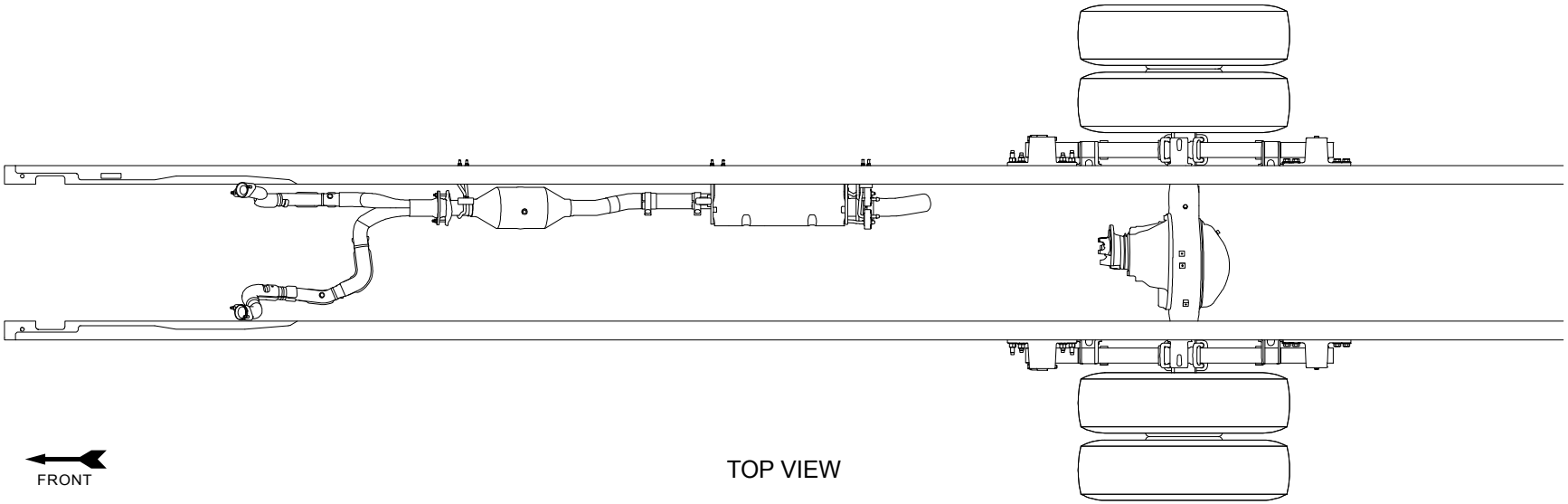
REAR VIEW



RIGHT SIDE VIEW: INSIDE OF PASSENGER SIDE FRAME RAIL

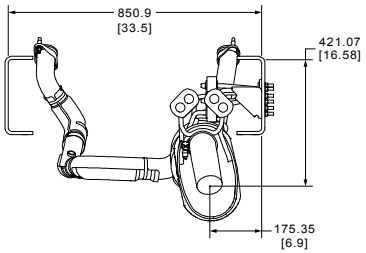
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
GASOLINE EXHAUST SYSTEM
HORIZONTAL INLINE
(SUPER CAB)

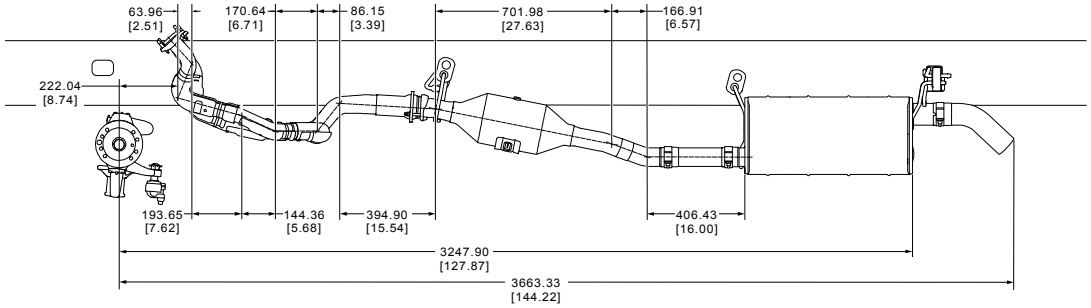


FRONT

TOP VIEW



REAR VIEW

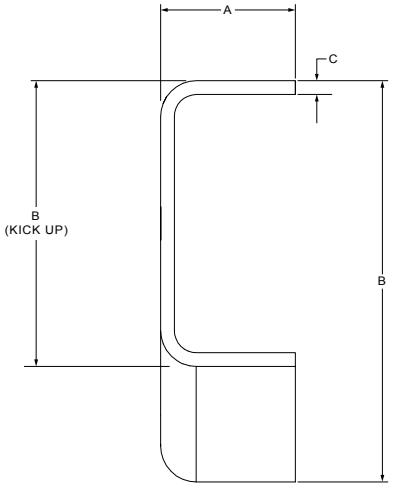


RIGHT SIDE VIEW: INSIDE OF PASSENGER SIDE FRAME RAIL

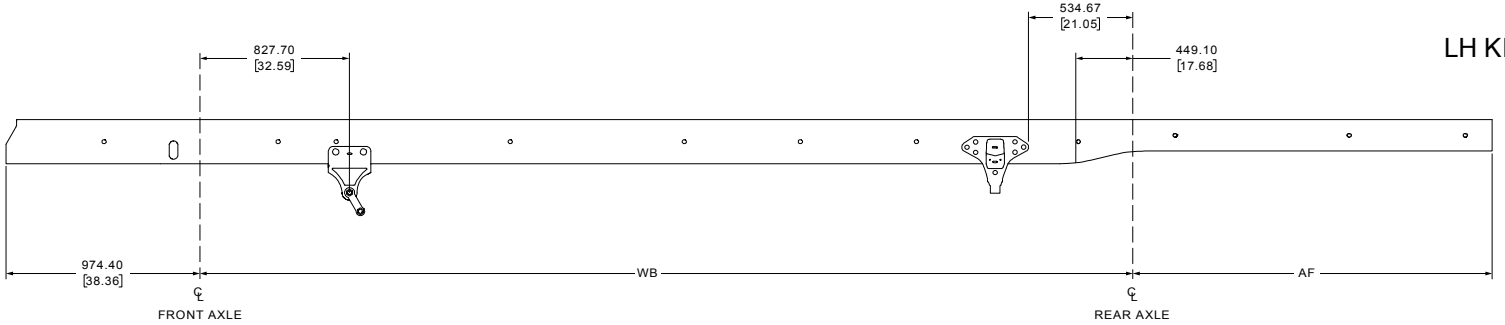
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
FRAME DATA
FRAME RAIL PROFILES

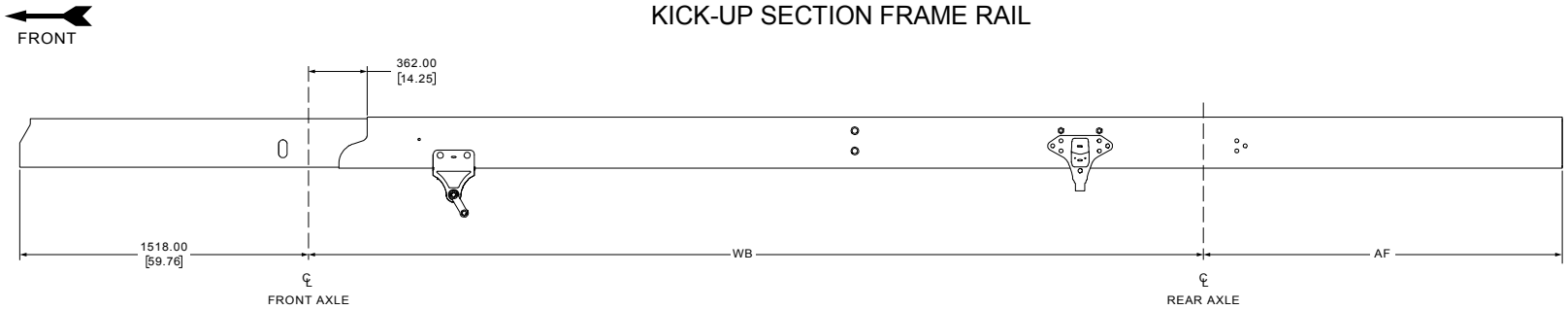
Order Code	Dimension A mm [in]	Dimension B mm [in]	Dimension C mm [in]	Section Modulus (in^3)	Yield (psi)	Bending Moment (in. -lbs)
533	77.800 (3.063)	231.800 (9.126)	7.925 (0.312)	10.75	80,000	859,200
534	77.800 (3.063)	257.200 (10.126)	7.925 (0.312)	12.64	50,000	632,000
536	90.900 (3.579)	257.200 (10.126)	7.925 (0.312)	14.18	120,000	1,701,600
535	78.500 (3.091)	260.400 (10.252)	9.525 (0.375)	15.14	80,000	1,211,200
539	94.000 (3.701)	263.600 (10.378)	11.125 (0.438)	20.11	120,000	2,413,200
537 (Rear Kick-Up)	77.800 (3.063)	231.800 (9.126) 164.900 (6.492)	7.925 (0.312)	10.75	80,000	860,000
536/412	98.900 (3.894)	276.000 (10.866)	15.850 (0.624)	29.2	120,000	3,504,000
538	91.69 (3.610)	260.35 (10.250)	9.525 (0.375)	16.98	120,000	2,038,000



LH KICK UP FRAME RAIL
REAR VIEW



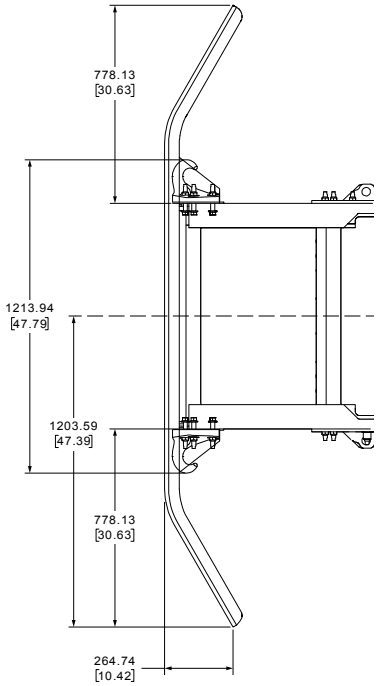
KICK-UP SECTION FRAME RAIL



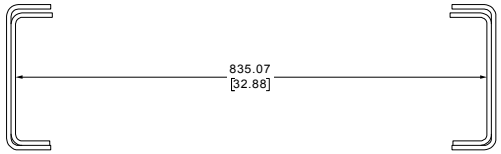
REINFORCED SECTION FRAME RAIL WITH INTEGRAL EXTENSION

NOTES — [ ] DIMENSIONS ARE INCHES.

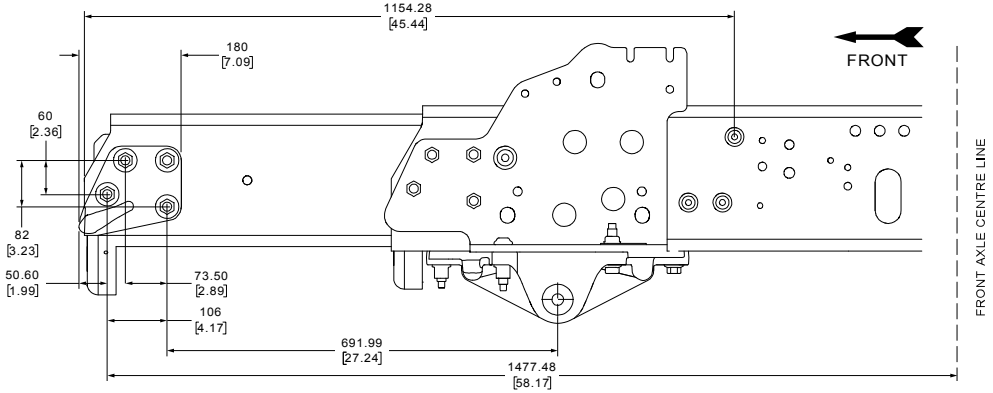
F650/750 SUPER DUTY
FRAME DATA
FRONT FRAME EXTENSION - 20 INCH BOLT ON



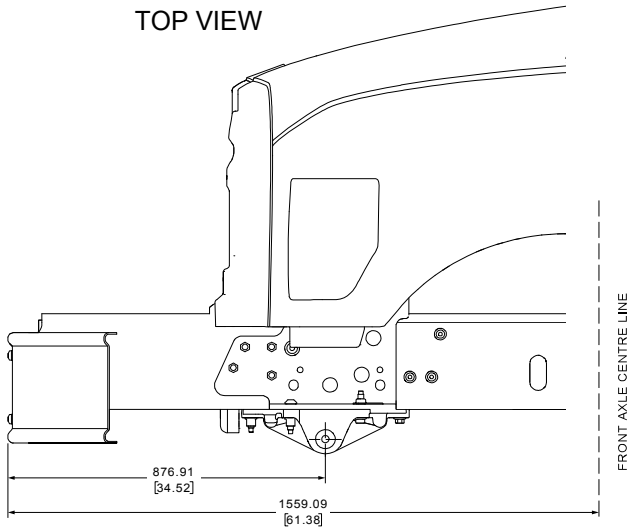
TOP VIEW



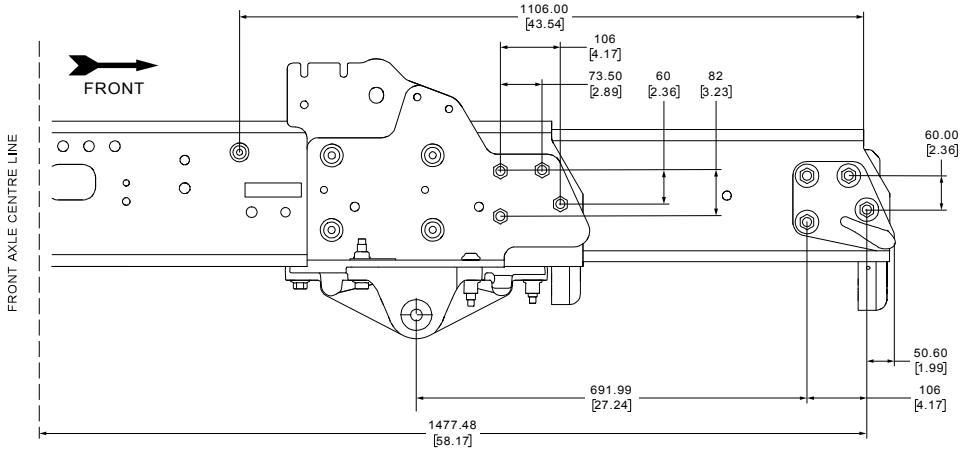
FRONT VIEW



LEFT SIDE VIEW



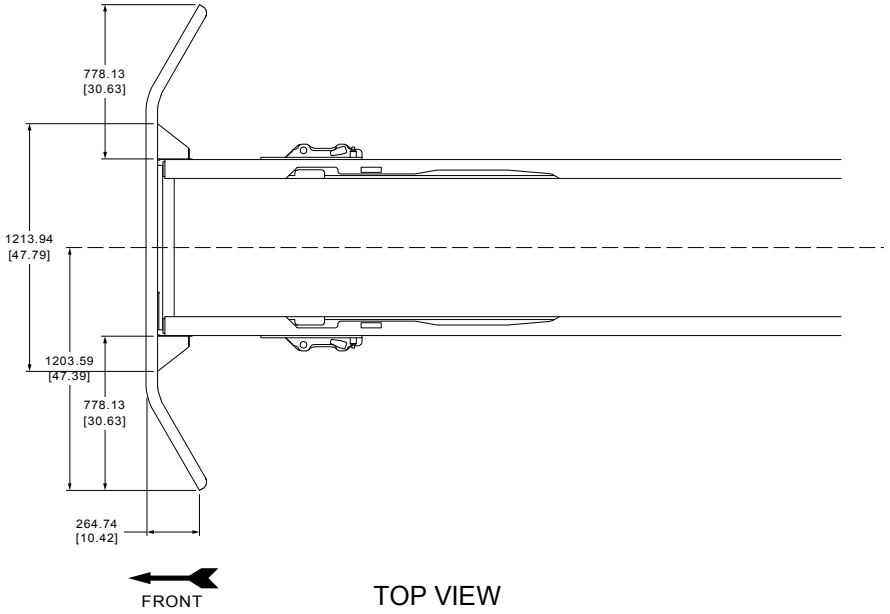
LEFT SIDE VIEW WITH HOOD



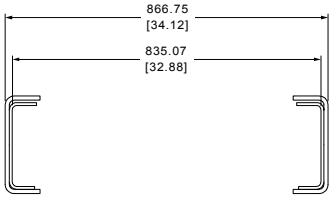
RIGHT SIDE VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.

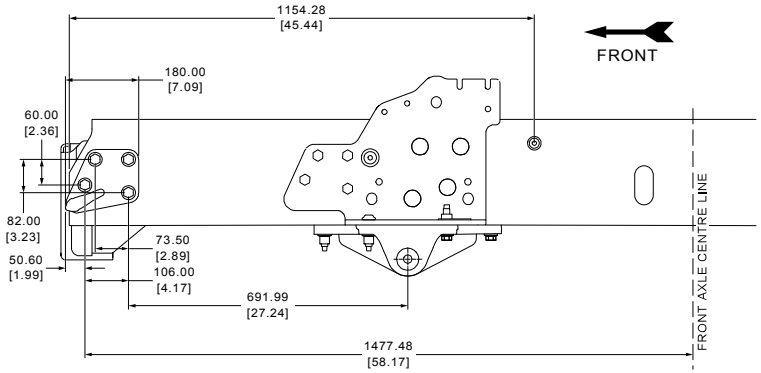
F650/750 SUPER DUTY
FRAME DATA
FRONT FRAME EXTENSION - INTEGRAL 20 INCH FRAME EXTENSION



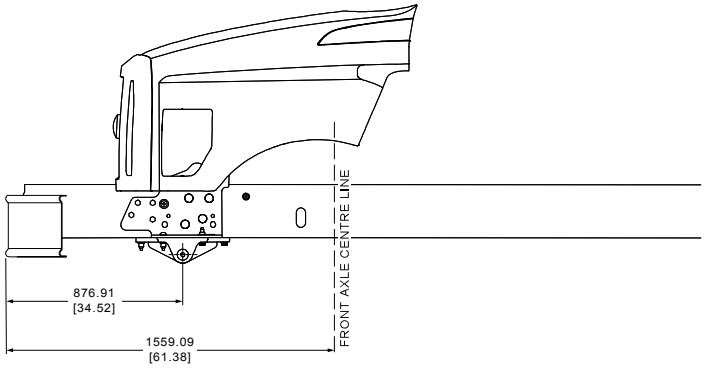
TOP VIEW



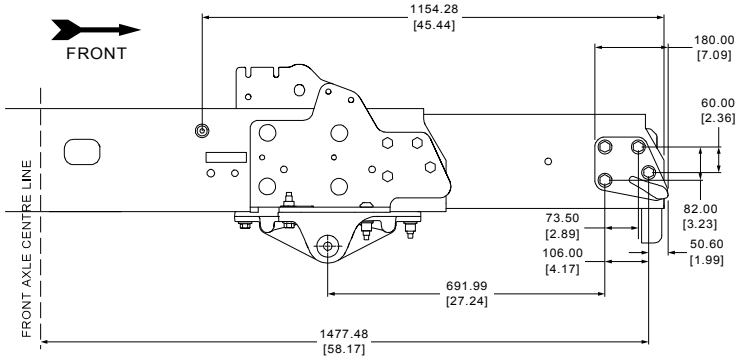
FRONT VIEW



LEFT SIDE VIEW



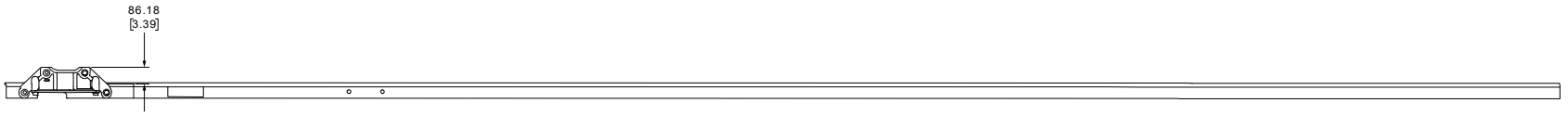
LEFT SIDE VIEW WITH HOOD
(RIGHT SIDE VIEW IS MIRROR IMAGE)



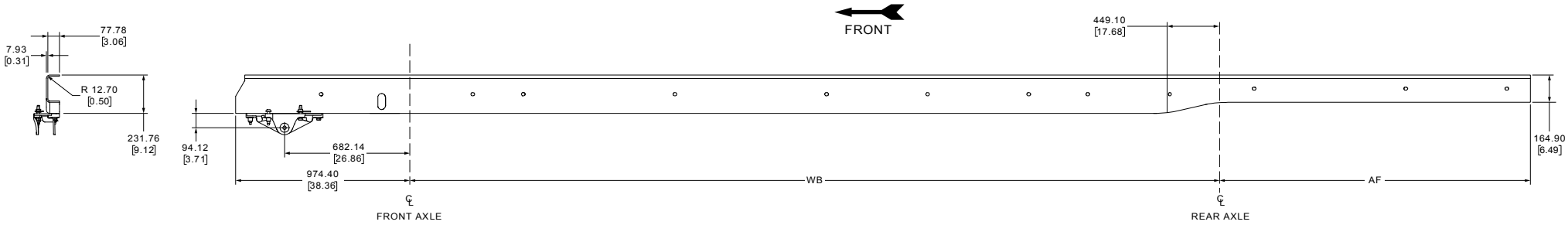
RIGHT SIDE VIEW

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
FRAME DATA
PRO LOADER FRAME



PRO LOADER FRAME



PRO LOADER FRAME

REGULAR CAB		SUPER CAB		CREW CAB	
WB mm [in]	AF mm [in]	WB mm [in]	AF mm [in]	WB mm [in]	AF mm [in]
4013.2 (158.0)	1600.2 (63.0)	4546.6 (179.0)	1600.2 (63.0)	4927.6 (194.0)	1600.2 (63.0)
4622.8 (182.0)	1905.0 (75.0)	5156.2 (203.0)	1905.0 (75.0)	5537.2 (218.0)	1905.0 (75.0)
4927.6 (194.0)	1905.0 (75.0)	6070.6 (239.0)	2057.4 (81.0)	6451.6 (254.0)	2438.4 (96.0)
5537.2 (218.0)	2057.4 (81.0)				
6146.8 (242.0)	2540.0 (100.0)				

General Recommendations for Frame and Body Mounting:

Refer to the Design Recommendations section for applicable requirements and important notes Particular attention should include sections relating to:

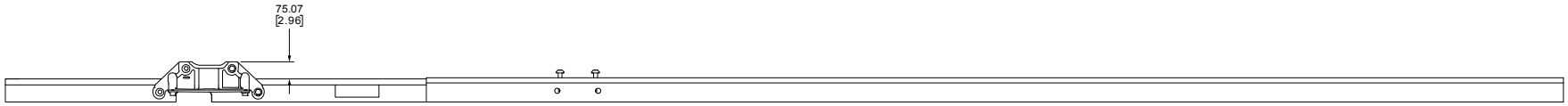
- Suspension and Steering System
  Important Front End Alignment note for final-stage manufacturer
- Frame
  Refer to Bulletin Q – 140 for frame modifications recommendation

On vehicles equipped with an Air Suspension System, verify that the settings are correct once the vehicle is completed by the final stage manufacturer. Refer to the applicable Ford workshop service manual for the complete procedure.
NOTE: Since there are different frames and air suspension system offered, verify that the procedure used is correct for the air suspension and frame type being worked on

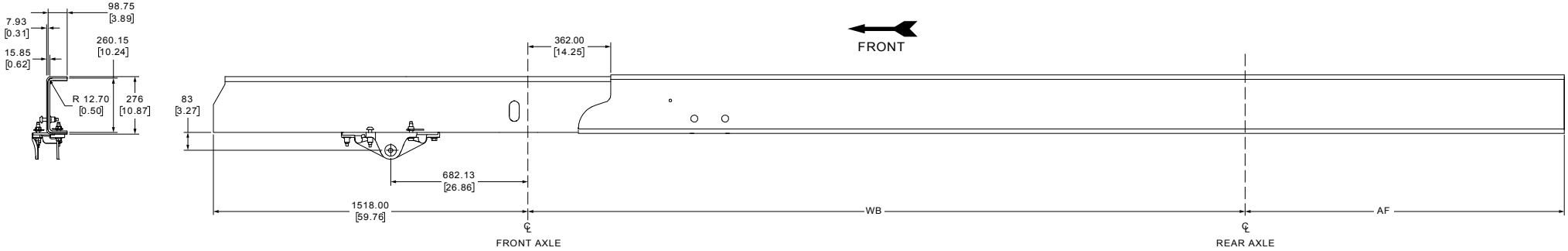
THICKNESS SIDE MEMBER MM [IN]	SECTION MODULUS CUBIC INCH	TYPE FRAME	MAX GVWR LBS
7.925 (0.312)	10.75	9.125	26,000

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
FRAME DATA
FRAME WITH REINFORCEMENT



FRAME WITH REINFORCEMENT AND INTEGRAL FRONT EXTENSION



FRAME WITH REINFORCEMENTS

REGULAR CAB		SUPER CAB		CREW CAB	
WB mm [in]	AF mm [in]	WB mm [in]	AF mm [in]	WB mm [in]	AF mm [in]
4013.2 (158.0)	1244.6 (49.0)	4546.6 (179.0)	1244.6 (49.0)	4622.8 (182.0)	1244.6 (49.0)
4470.4 (176.0)	1778.0 (70.0)	5003.8 (197.0)	1778.0 (70.0)	4927.6 (194.0)	1244.6 (49.0)
4622.8 (182.0)	1778.0 (70.0)	5156.2 (203.0)	1778.0 (70.0)	5384.8 (212.0)	1778.0 (70.0)
4927.6 (194.0)	1905.0 (75.0)	5461.0 (215.0)	1905.0 (75.0)	5537.2 (218.0)	1778.0 (70.0)
5080.0 (200.0)	1905.0 (75.0)	5613.4 (221.0)	1905.0 (75.0)	5842.0 (230.0)	1905.0 (75.0)
5384.8 (212.0)	2057.4 (81.0)	5918.2 (233.0)	2057.4 (81.0)	5994.4 (236.0)	1905.0 (75.0)
5537.2 (218.0)	2057.4 (81.0)	6070.6 (239.0)	2057.4 (81.0)	6299.2 (248.0)	2057.4 (81.0)
5689.6 (224.0)	2209.8 (87.0)	6223.0 (245.0)	2209.8 (87.0)	6451.6 (254.0)	2057.4 (81.0)
5842.0 (230.0)	2209.8 (87.0)	6375.4 (251.0)	2209.8 (87.0)	6604.0 (260.0)	2209.8 (87.0)
6146.8 (242.0)	2540.0 (100.0)	6680.2 (263.0)	2540.0 (100.0)	6756.4 (266.0)	2209.8 (87.0)
6604.0 (260.0)	3048.0 (120.0)	7137.4 (281.0)	3048.0 (120.0)		
7137.4 (281.0)	3048.0 (120.0)				

General Recommendations for Frame and Body Mounting:

Refer to the Design Recommendations section for applicable requirements and important notes Particular attention should include sections relating to:

- Suspension and Steering System
  Important Front End Alignment note for final-stage manufacturer
- Frame
  Refer to Bulletin Q – 140 for frame modifications recommendation

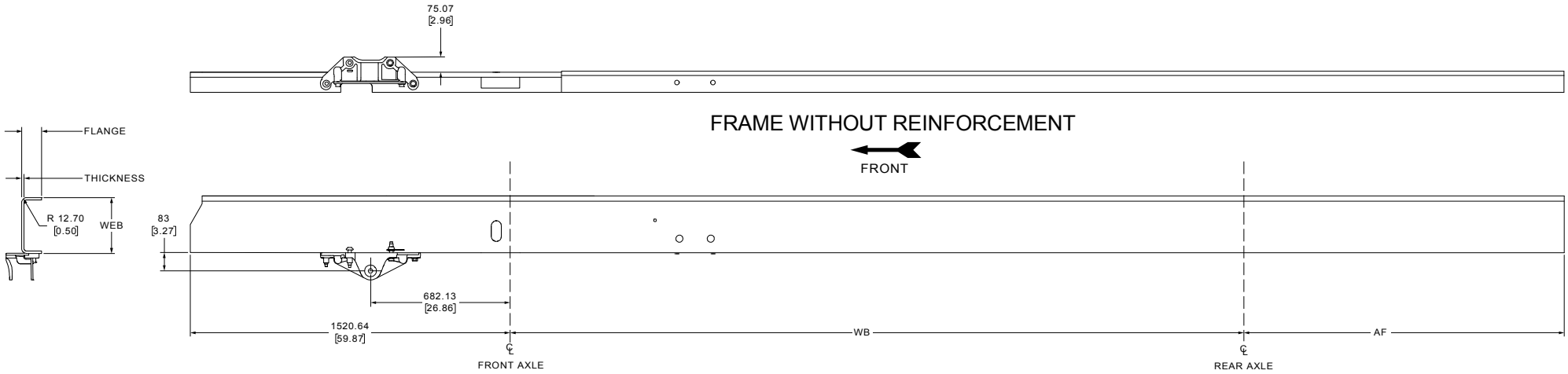
On vehicles equipped with an Air Suspension System, verify that the settings are correct once the vehicle is completed by the final stage manufacturer. Refer to the applicable Ford workshop service manual for the complete procedure.
NOTE: Since there are different frames and air suspension system offered, verify that the procedure used is correct for the air suspension and frame type being worked on

FRAME WITH REINFORCEMENT

THICKNESS REINFORCEMENT MM [IN]	THICKNESS SIDE MEMBER MM [IN]	SECTION MODULUS CUBIC INCH	TYPE FRAME	MAX GVWR LBS
7.925 (0.312)	7.925 (0.312)	29.2	10.866	37,000

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
FRAME DATA
FRAME WITHOUT REINFORCEMENT



FRAME WITHOUT REINFORCEMENT

FRONT

FRONT VIEW

General Recommendations for Frame and Body Mounting:

Refer to the Design Recommendations section for applicable requirements and important notes Particular attention should include sections relating to:

- Suspension and Steering System
  Important Front End Alignment note for final-stage manufacturer
- Frame
  Refer to Bulletin Q – 140 for frame modifications recommendation

On vehicles equipped with an Air Suspension System, verify that the settings are correct once the vehicle is completed by the final stage manufacturer. Refer to the applicable Ford workshop service manual for the complete procedure.
NOTE: Since there are different frames and air suspension system offered, verify that the procedure used is correct for the air suspension and frame type being worked on

FRAME WITHOUT REINFORCEMENTS

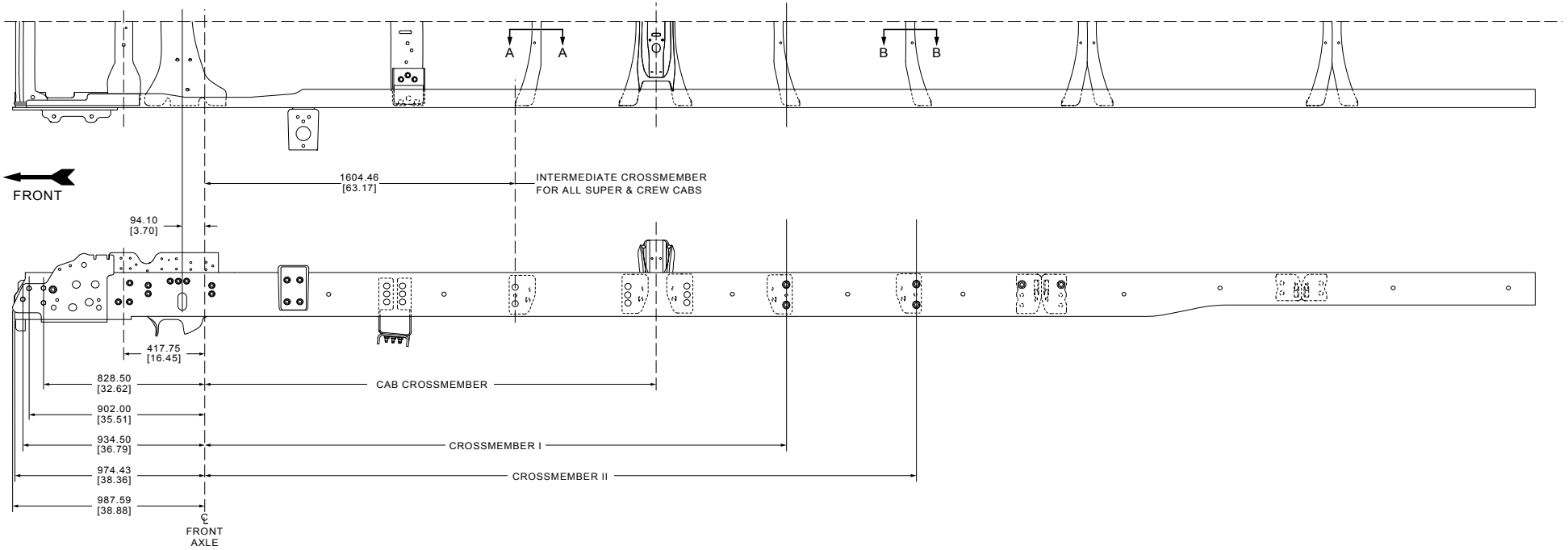
REGULAR CAB		SUPER CAB		CREW CAB	
WB mm [in]	AF mm [in]	WB mm [in]	AF mm [in]	WB mm [in]	AF mm [in]
3708.4 (146.0)	990.6 (39.0)	4241.8 (167.0)	990.6 (39.0)	4622.8 (182.0)	990.6 (39.0)
4013.2 (158.0)	990.6 (39.0)	4546.6 (179.0)	990.6 (39.0)	4622.8 (182.0)	1244.6 (49.0)
4013.2 (158.0)	1244.6 (49.0)	4546.6 (179.0)	1244.6 (49.0)	4927.6 (194.0)	1244.6 (49.0)
4470.4 (176.0)	1778.0 (70.0)	5003.8 (197.0)	1778.0 (70.0)	5384.8 (212.0)	1778.0 (70.0)
4622.8 (182.0)	1778.0 (70.0)	5156.2 (203.0)	1778.0 (70.0)	5537.2 (218.0)	1778.0 (70.0)
4927.6 (194.0)	1905.0 (75.0)	5461.0 (215.0)	1905.0 (75.0)	5842.0 (230.0)	1905.0 (75.0)
5080.0 (200.0)	1905.0 (75.0)	5613.4 (221.0)	1905.0 (75.0)	5994.4 (236.0)	1905.0 (75.0)
5384.8 (212.0)	2057.4 (81.0)	5918. (233.0)	2057.4 (81.0)	6299.2 (248.0)	2057.4 (81.0)
5537.2 (218.0)	2057.4 81.0)	6070.6 (239.0)	2057.4 (81.0)	6451.6 (254.0)	2057.4 (81.0)
5689.6 (224.0)	2209.8 (87.0)	6223.0 (245.0)	2209. (87.0)	6604.0 (260.0)	2209.8 (87.0)
5842.0 (230.0)	2209.8 (87.0)	6375.4 (251.0)	2209.8 (87.0)	6756.4 (266.0)	2209.8 (87.0)
6146.8 (242.0)	2540.0 (100.0)	6680.2 (263.0)	2540.0 (100.0)	7061.2 (278.0)	2540.0 (100.0)
6604.0 (260.0)	2362.2 (93.0)	7137.4 (281.0)	3048.0 (120.0)		
6604.0 (260.0)	3048.0 (120.0)				
7137.4 (281.0)	3048.0 (120.0)				

FRAME WITHOUT REINFORCEMENTS

MODEL	THICKNESS SIDE MEMBER MM [IN]	WEB SIDE MEMBER MM [IN]	FLANGE SIDE MEMBER MM [IN]	SECTION MODULUS CUBIC INCH	TYPE FRAME	MAX GVWR LBS
F650 TRACTOR, F750 TRACTOR	7.925 (0.312)	257.200 (10.126)	90.900 (3.579)	14.18	10.125	37,000
F650, F750	7.925 (0.312)	257.200 (10.126)	90.900 (3.579)	14.18	10.125	37,000
F650, F750	9.525 (0.375)	260.400 (10.252)	78.500 (3.091)	15.14	10.250	37,000
F650	7.925 (0.312)	231.800 (9.126)	77.800 (3.063)	10.75	9.125	29,000
F650	7.925 (0.312)	257.200 (10.126)	77.800 (3.063)	12.64	10.125	29,000
F750	11.125 (0.438)	263.600 (10.378)	94.000 (3.701)	20.11	10.378	37,000
F750	9.525 (0.375)	260.35 (10.250)	91.69 (3.610)	16.98	10.250	37,000

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
CROSSMEMBER DATA
PRO LOADER - DIESEL & GASOLINE ENGINE

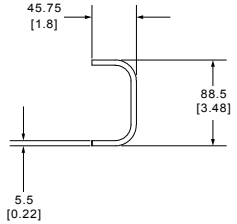


CAB CROSSMEMBER	
REGULAR CAB	1759.84 (69.29)
SUPER CAB	2291.2 (90.2)
CREW CAB	2659.62 (104.71)

SUPER CAB	CROSSMEMBER	
WB RANGE	I	II
4646.6	3003.0 (118.2)	-
5156.2	3003.0 (118.2)	4123.0 (162.3)
6070.6	3003.0 (118.2)	4571.0 (180.0)

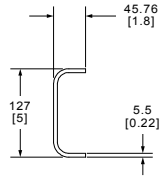
REGULAR CAB	CROSSMEMBER	
WB RANGE	I	II
4013.2	2582.0 (101.7)	-
4622.8	2779.0 (109.4)	-
4927.6	3003.0 (118.2)	-
5537.2	2810.9 (110.7)	4123.0 (162.3)
6146.8	3003.0 (118.2)	4571.0 (180.0)

CREW CAB	CROSSMEMBER	
WB RANGE	I	II
4927.6	3451.0 (135.9)	-
5537.2	3899.0 (153.5)	-
6451.6	3451.0 (135.9)	4571.0 (180.0)



℄ SECTION OF
INTEREMEDIATE CROSSMEMBER
FOR ALL SUPER & CREW CABS

SECTION A - A

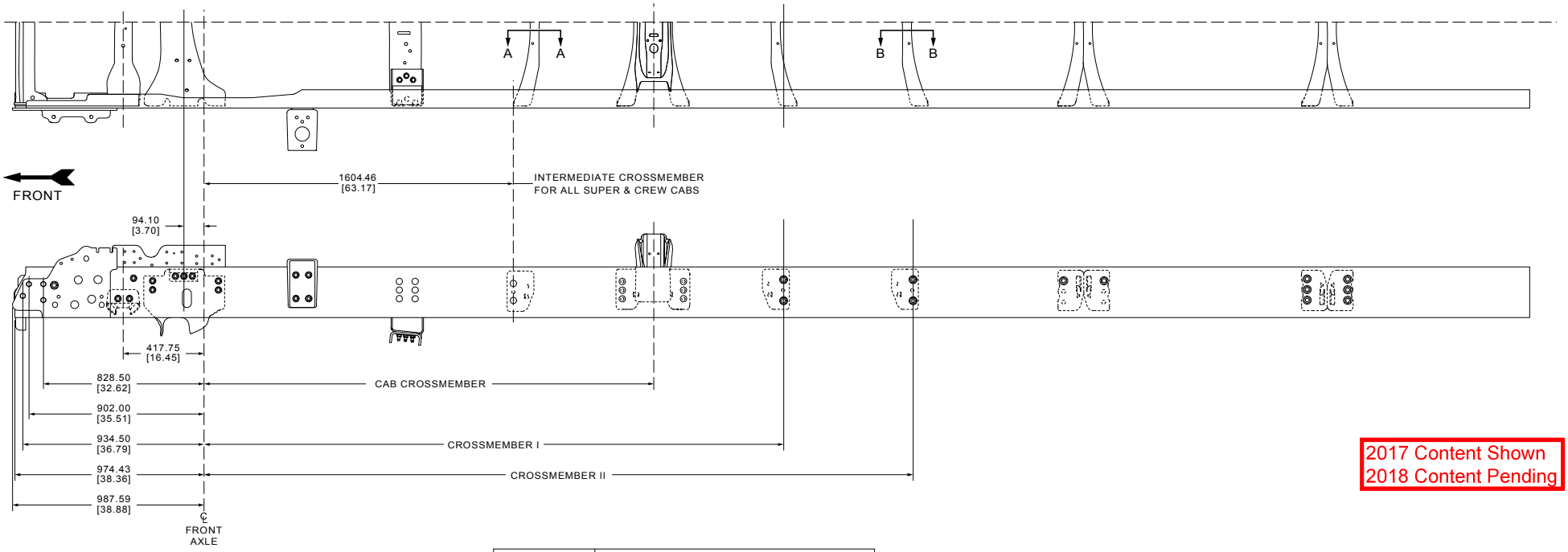


℄ SECTION OF
CROSSMEMBER I, II

SECTION B - B

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
CROSSMEMBER DATA
DOCK HEIGHT - DIESEL / GASOLINE ENGINE



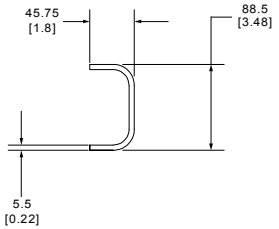
2017 Content Shown
2018 Content Pending

CAB CROSSMEMBER	
REGULAR CAB	1759.84 (69.29)
SUPER CAB	2291.2 (90.2)
CREW CAB	2659.62 (104.71)

REGULAR CAB	CROSSMEMBER		
WB RANGE	I	II	III
3708.4	2331.0 (91.8)	-	-
4013.2	2582.0 (101.7)	-	-
4470.4	2779.0 (109.4)	-	-
4622.8	2779.0 (109.4)	-	-
4927.6	3003.0 (118.2)	-	-
5080.0	2810.9 (110.7)	3675.0 (144.7)	-
5384.8	2810.9 (110.7)	3675.0 (144.7)	-
5537.2	2810.9 (110.7)	4123.0 (162.3)	-
5689.6	2810.9 (110.7)	4123.0 (162.3)	-
5842.0	2810.9 (110.7)	4123.0 (162.3)	-
6146.8	3003.0 (118.2)	4571.0 (180.0)	-
6604.0	2810.9 (110.7)	3899.0 (153.5)	5019.0 (197.6)
7137.4	2810.9 (110.7)	4123.0 (162.3)	5423.0 (213.5)

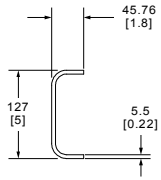
SUPER CAB	CROSSMEMBER		
WB RANGE	I	II	III
4241.8	-	-	-
4546.6	3003.0 (118.2)	-	-
5003.8	3003.0 (118.2)	3675.0 (144.7)	-
5156.2	3003.0 (118.2)	3675.0 (144.7)	-
5461.0	3003.0 (118.2)	4123.0 (162.3)	-
5613.4	3003.0 (118.2)	4123.0 (162.3)	-
5918.2	3003.0 (118.2)	4123.0 (162.3)	-
6070.6	3003.0 (118.2)	4171.0 (164.2)	-
6223.0	3003.0 (118.2)	4571.0 (180.0)	-
6375.4	3003.0 (118.2)	4571.0 (180.0)	-
6680.2	3003.0 (118.2)	3899.0 (153.5)	5019.0 (197.6)
7137.4	3003.0 (118.2)	4123.0 (162.3)	5691.0 (224.1)

CREW CAB	CROSSMEMBER		
WB RANGE	I	II	III
4622.8	-	-	-
4927.6	3451.0 (135.9)	-	-
5384.8	3675.0 (144.7)	-	-
5537.2	3899.0 (153.5)	-	-
5842.0	4347.0 (171.1)	-	-
5994.4	4347.0 (171.1)	-	-
6299.2	3451.0 (135.9)	4571.0 (180.0)	-
6451.6	3451.0 (135.9)	4571.0 (180.0)	-
6604.0	3899.0 (153.5)	5019.0 (197.6)	-
6756.4	3899.0 (153.5)	5019.0 (197.6)	-
7061.2	4123.0 (162.3)	5243.0 (206.4)	-



℄ SECTION OF
INTEREMEDIATE CROSSMEMBER
FOR ALL SUPER & CREW CABS

SECTION A - A

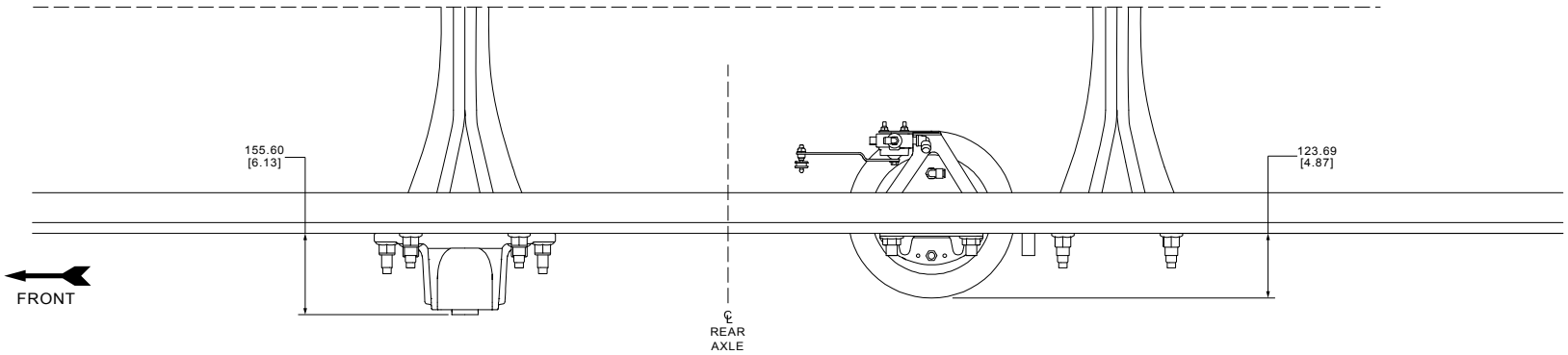


℄ SECTION OF
CROSSMEMBER I, II

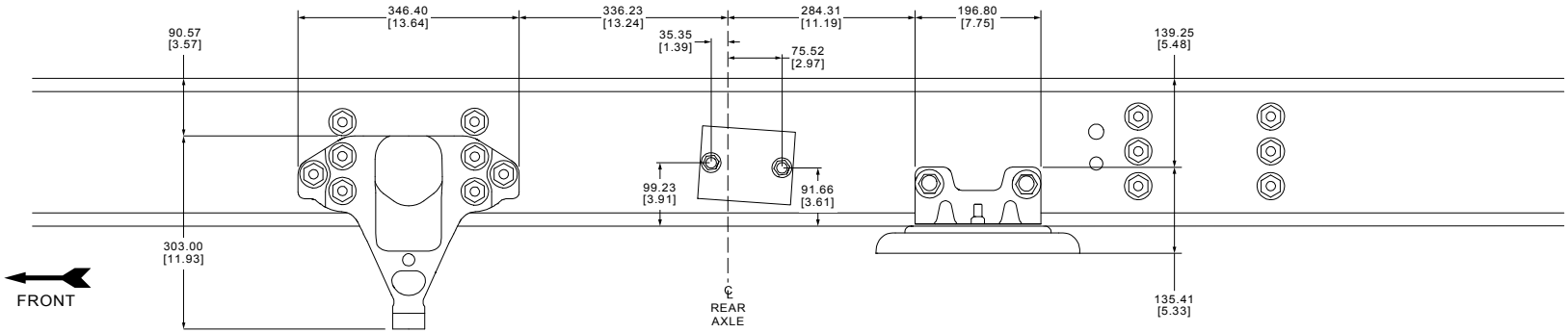
SECTION B - B

NOTES — [ ] DIMENSIONS ARE INCHES.

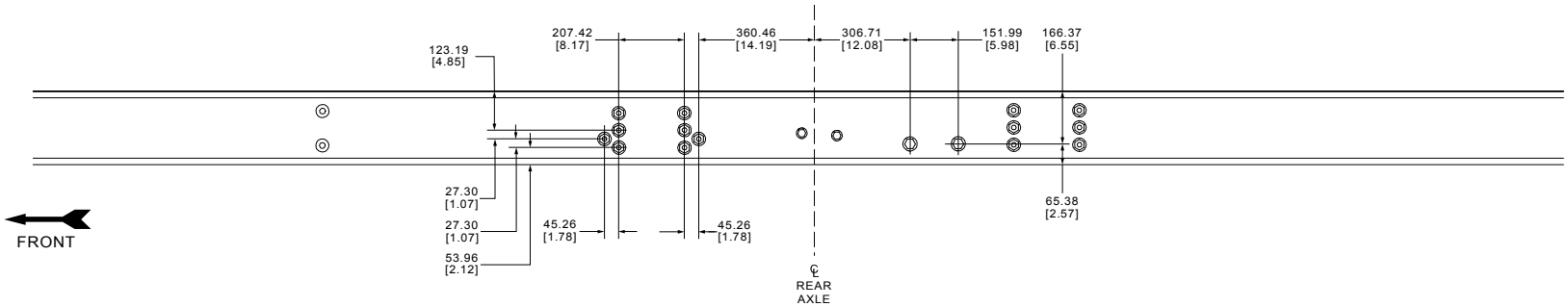
F650/750 SUPER DUTY
HENDRICKSON AIR SUSPENSION
8.5” FRAME RAIL



TOP VIEW



SIDE VIEW - OUTSIDE LEFT FRAME RAIL

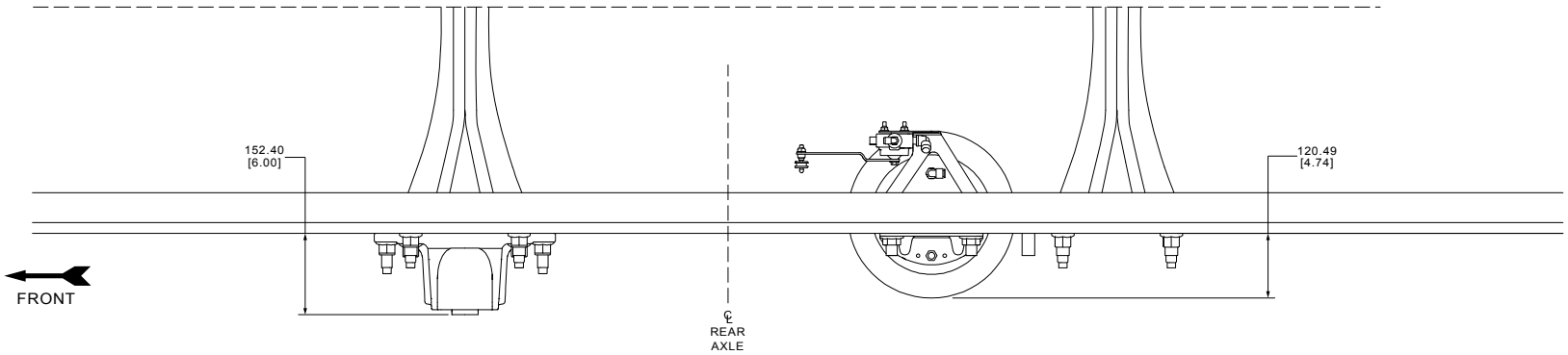


SIDE VIEW - FRAME PIERCINGS

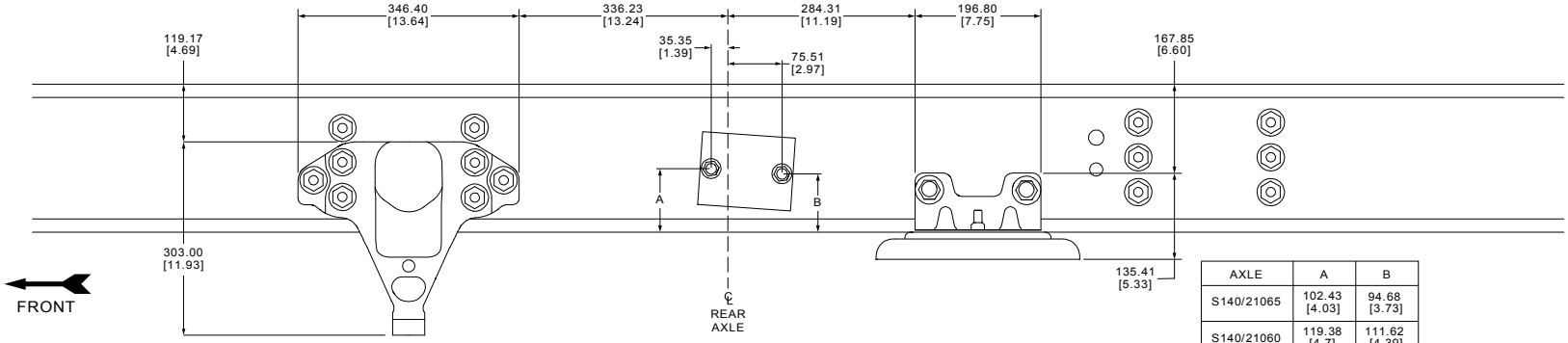
NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
HENDRICKSON AIR SUSPENSION
9.5” FRAME RAIL

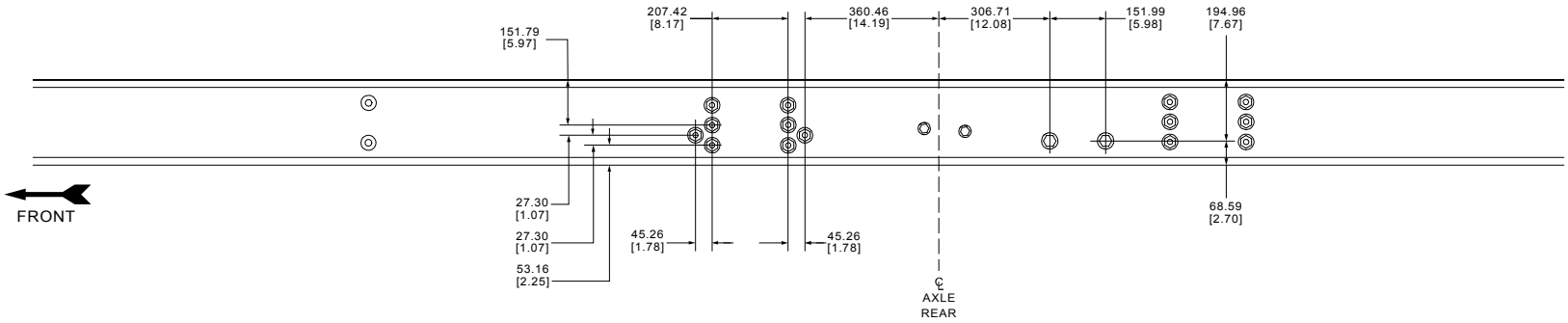


TOP VIEW



AXLE	A	B
S140/21065	102.43 [4.03]	94.68 [3.73]
S140/21060	119.38 [4.7]	111.62 [4.39]
S170	118.11 [4.65]	110.53 [4.35]

SIDE VIEW - OUTSIDE LEFT FRAME RAIL

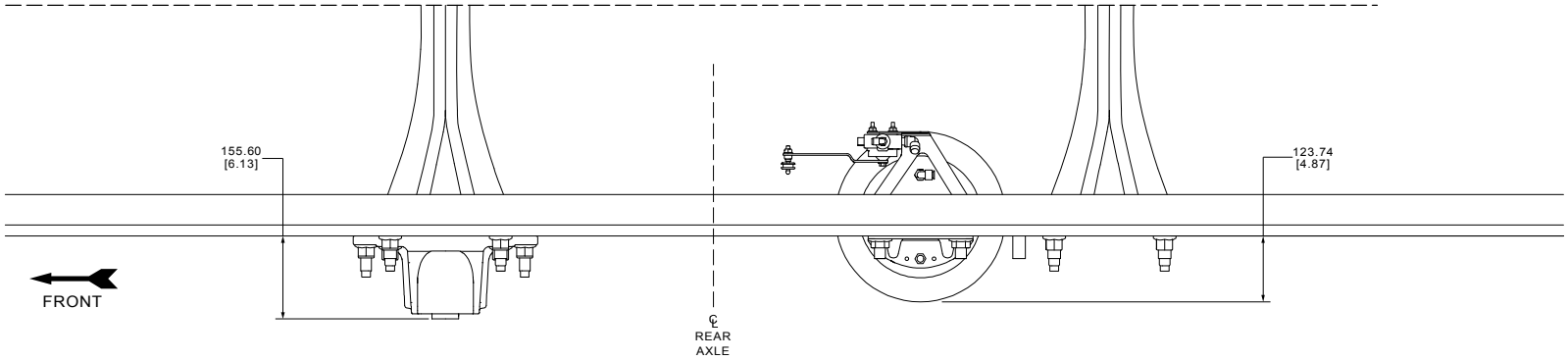


SIDE VIEW - FRAME PIERCINGS

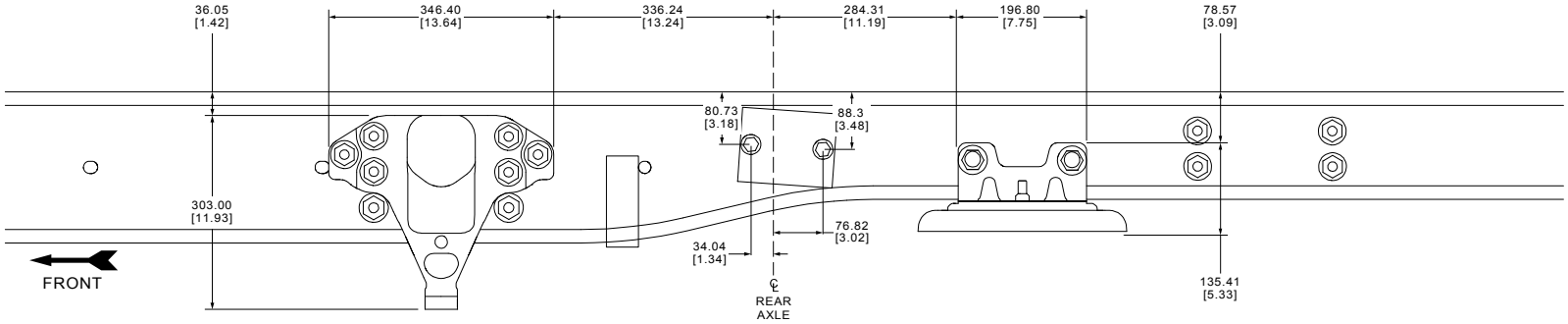
NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

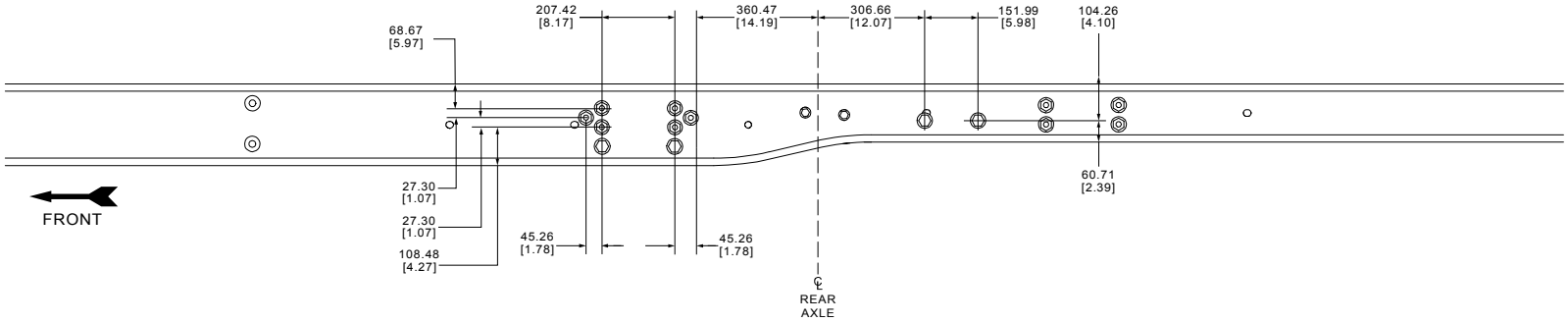
F650/750 SUPER DUTY
HENDRICKSON AIR SUSPENSION
KUP FRAME RAIL



TOP VIEW



SIDE VIEW - OUTSIDE LEFT FRAME RAIL

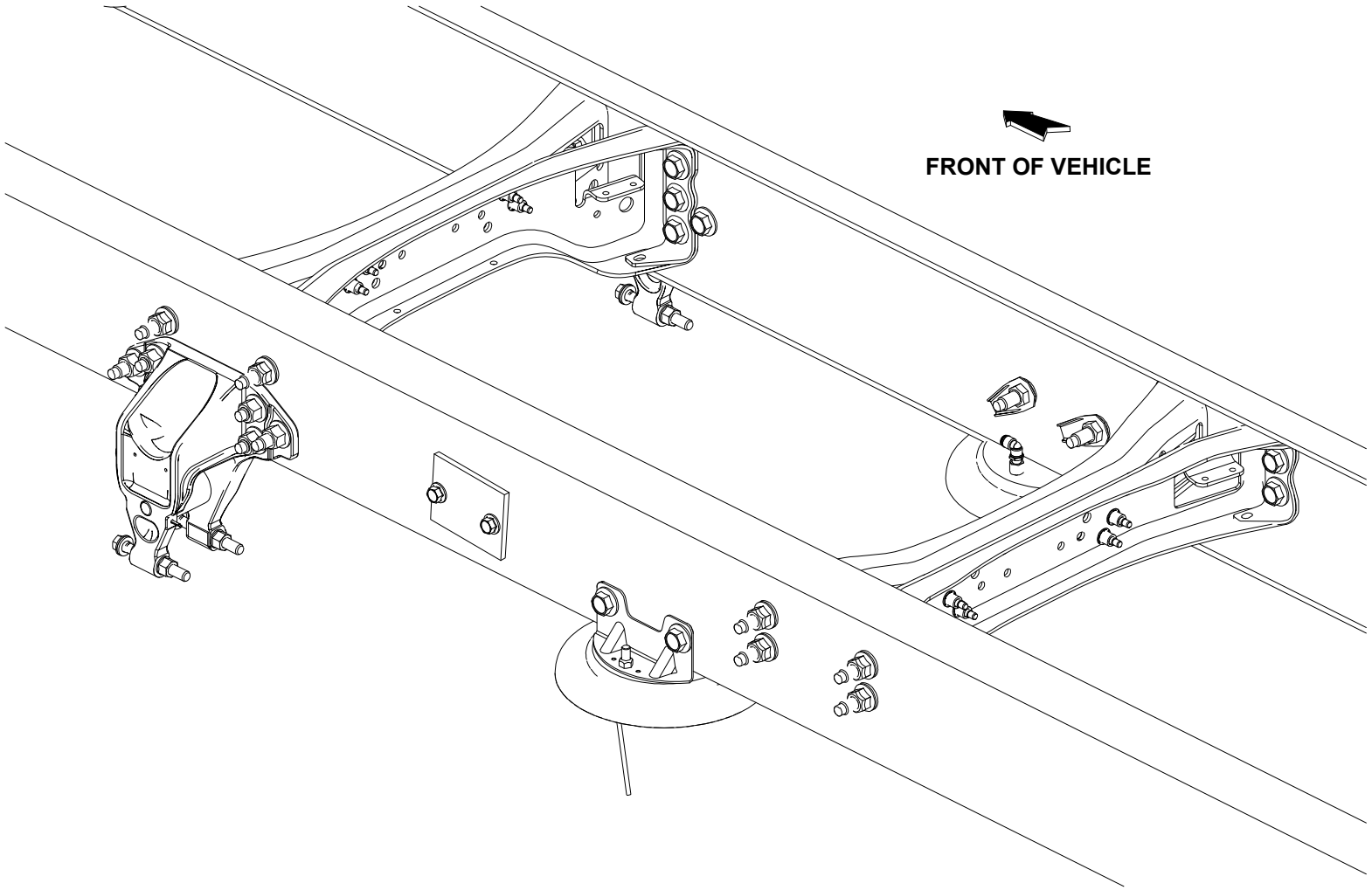


SIDE VIEW - FRAME PIERCINGS

NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

F750 SUPER DUTY
HENDRICKSON AIR SUSPENSION
9.5" FRAME RAIL
DOWNGRADE PACKAGE 2

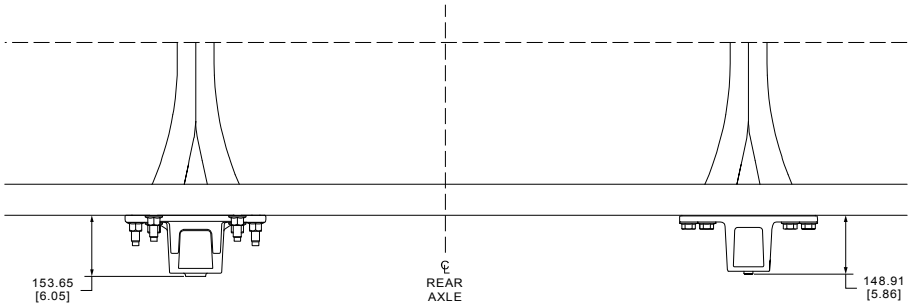


REAR DOUBLE DOGBONE POSITIONS OF REAR SUSPENSION

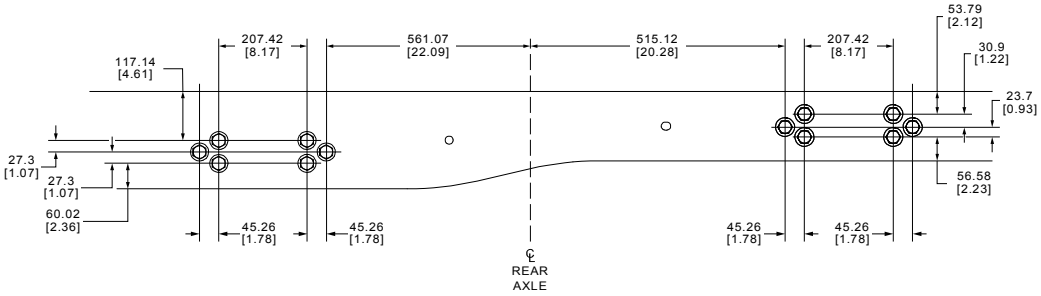
NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

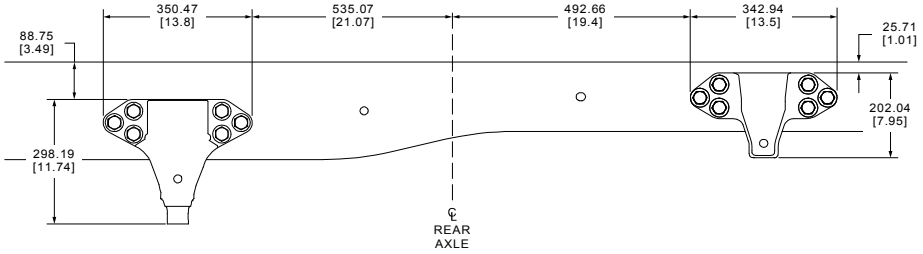
F650/750 SUPER DUTY
SPRING SUSPENSION
KICK-UP FRAME



TOP VIEW



SIDE VIEW - FRAME PIERCINGS

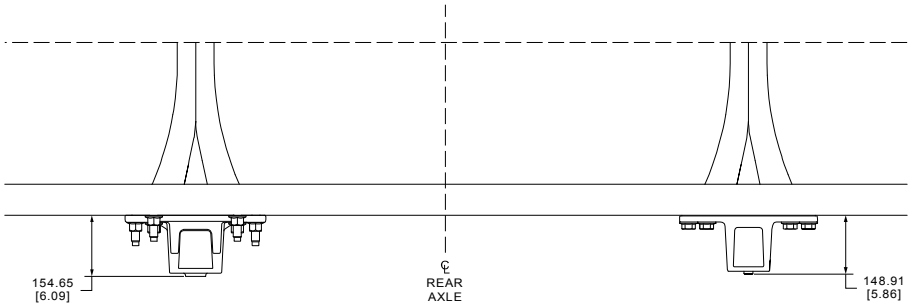


SIDE VIEW - OUTSIDE LEFT FRAME RAIL

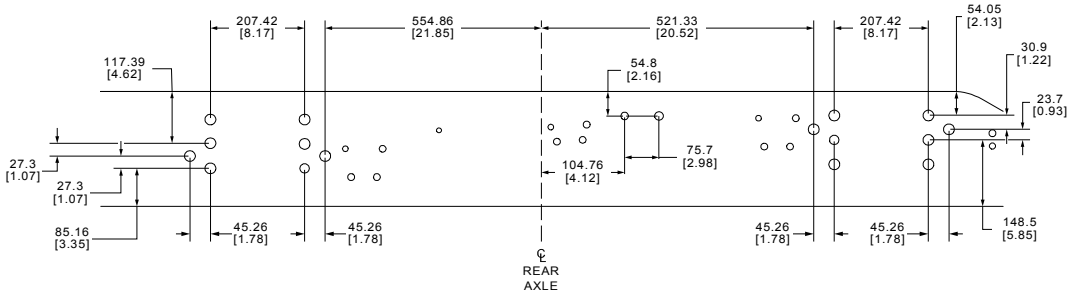
NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

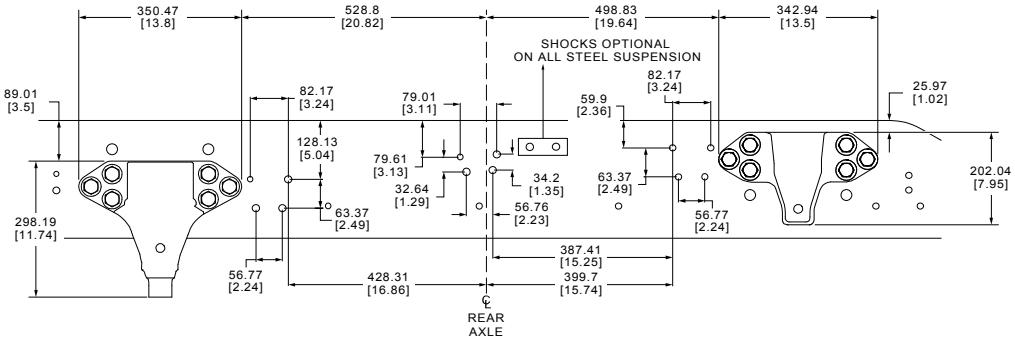
F650/750 SUPER DUTY
SPRING SUSPENSION



TOP VIEW



SIDE VIEW - FRAME PIERCINGS

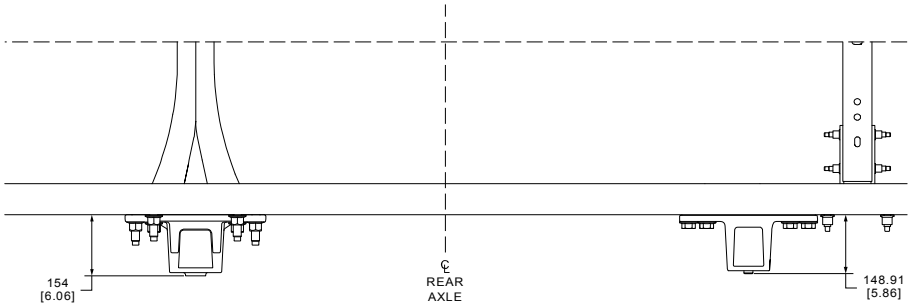


SIDE VIEW - OUTSIDE LEFT FRAME RAIL

NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

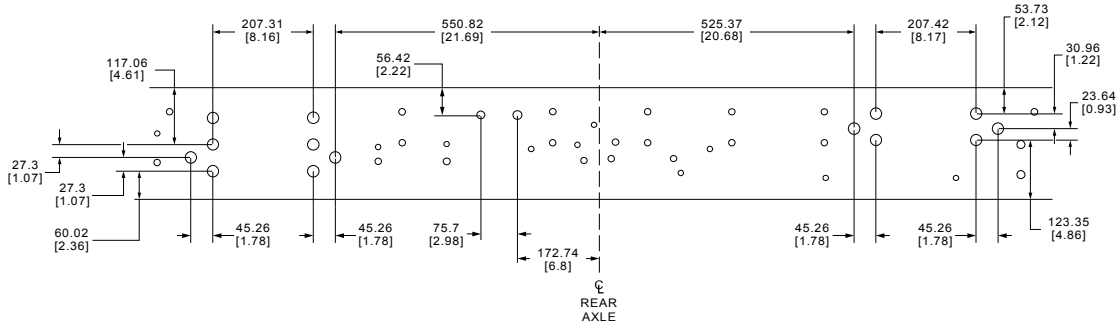
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
SPRING SUSPENSION
LIMITED SERIES FRAME



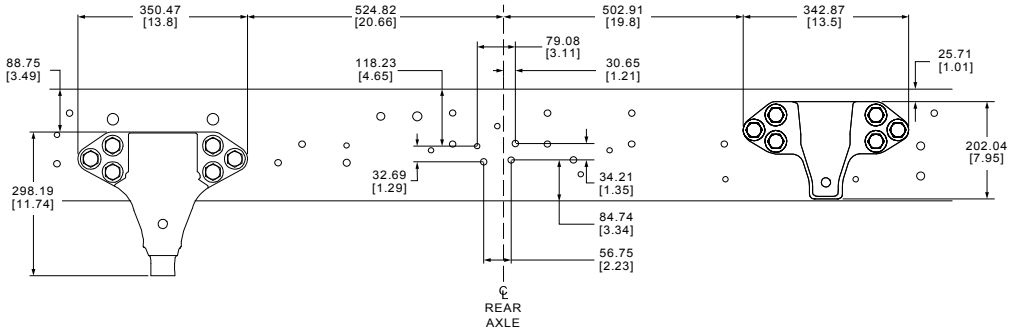
FRONT

TOP VIEW



FRONT

SIDE VIEW - FRAME PIERCINGS



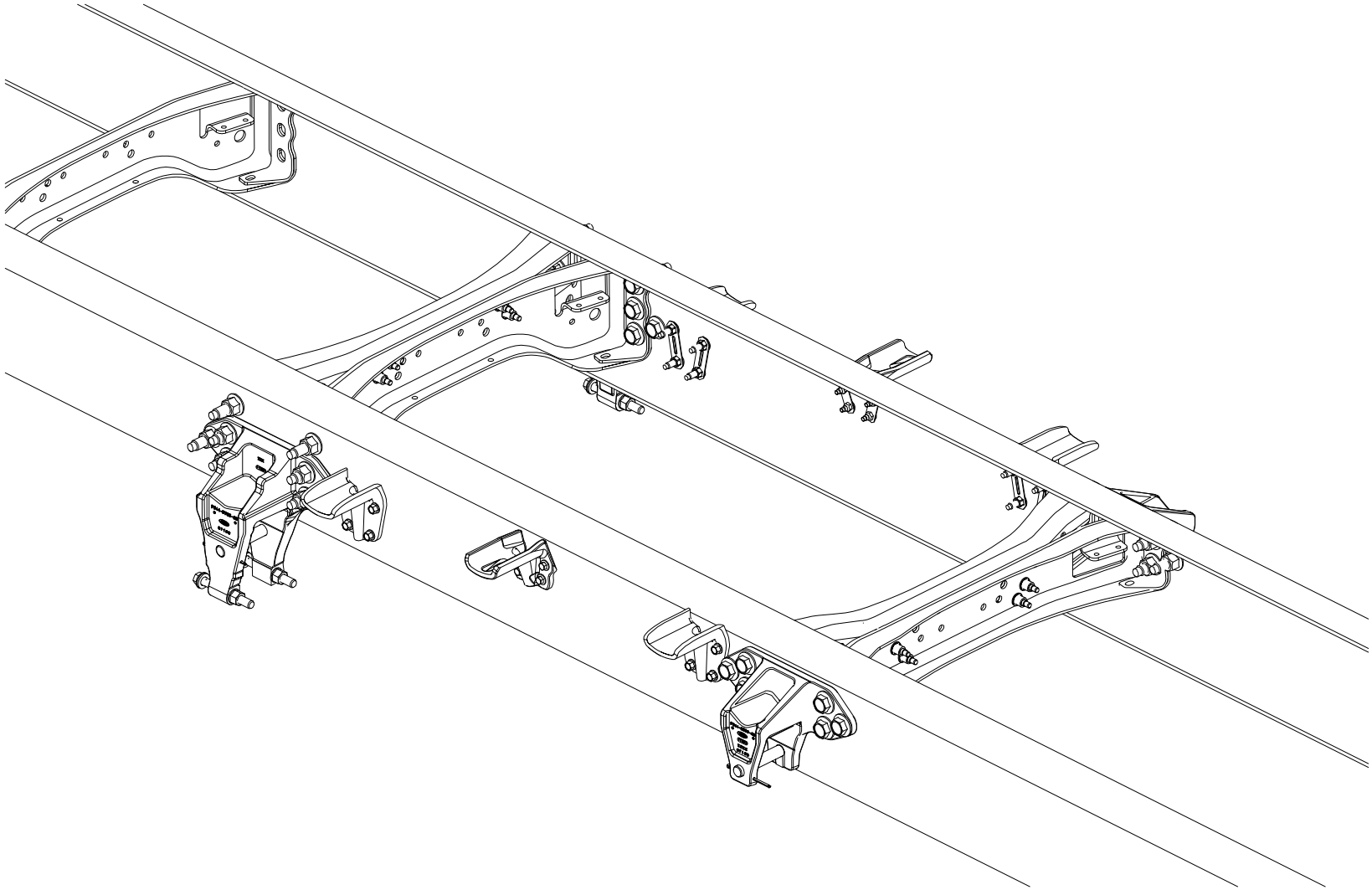
FRONT

SIDE VIEW - OUTSIDE LEFT FRAME RAIL

NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

F750 SUPER DUTY
SPRING SUSPENSION
DOWNGRADE PACKAGE 2



REAR DOUBLE DOGBONE POSITIONS

NEW HARDWARE MUST BE USED WHEN REBUILDING SUSPENSION COMPONENTS TO FRAME.

NOTES — [ ] DIMENSIONS ARE INCHES.

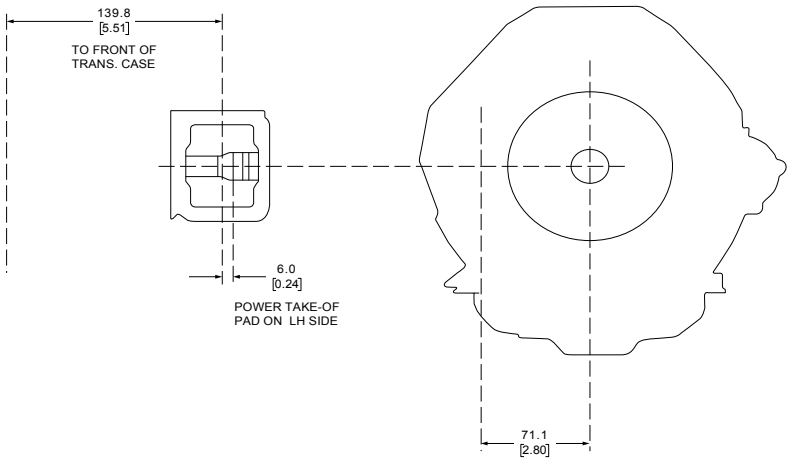
F650/750 SUPER DUTY
SEIC /PTO
TRANSMISSION SPECIFICATION

SUBJECT	ITEM	TORQSHIFT 6-SPEED AUTOMATIC 6.7L Diesel	TORQSHIFT 6-SPEED AUTOMATIC 6.8L Gas
Transmission Fluid Type (1)		Mercon LV ATF	Mercon LV ATF
Hydraulic Fluid Line Pressure (1)	At base engine speed (Park)	120 or 90 ps i @ 600 rpm	120 or 90 ps i @ 725 rpm
	At base engine speed (Neutral)	90 ps i @ 600 rpm	90 ps i @ 725 rpm
	At base engine speed (Drive)	65 ps i @ 600 rpm	65 ps i @ 600 rpm
	PTO Enabled (Park)	150 psi	150 psi
	PTO Enabled (Neutral)	150 psi	150 psi
	PTO Enabled (Drive)	150 psi	NA
Transmission Gear Ratios	1st	3.974	3.974
	2nd	2.318	2.318
	3rd	1.516	1.516
	4th	1.149	1.149
	5th	0.858	0.858
	6th	0.674	0.674
	Reverse	3.128	3.128
	Torque Converter Multiplication	1.85	2.00
PTO Drive Gear Function	All Forward Drive Gears	Mobile Mode	Mobile Mode-Not Available
	Reverse	Mobile Mode	Mobile Mode-Not Available
	Overdrive	Mobile Mode	Mobile Mode-Not Available
	Park	Stationary Mode\Mobile Mode	Stationary Mode
	Neutral	Stationary Mode\Mobile Mode	Stationary Mode
PTO Drive Gear Data	PTO Port	LH (Driver Side) only SAE 6-Bolt pattern	LH (Driver Side) only SAE 6-Bolt pattern
	Gear Torque Rating	300 lb-ft Stationary, 200 lb-ft Mobile	250 lb-ft Stationary,125 lb-ft Mobile
	Gear Ratio	1	1
	Number of gear teeth	52	52
	Pitch Diameter	108.472 mm	108.472 mm
	Normal Pressure Angle	19.339 Degrees	19.339 Degrees
	Angle and Hand of Helix	RH-Spur Gear	RH-Spur Gear
	Gear RPM at 1000 Engine RPM	1000	1000
	Pitch Line Diameter Velocity @ 1000 Engine RPM	1118 ft/min	1118 ft/min
Aftermarket PTO Model Series (2)	Chelsea Technical Service (662) 895-1052, chelseatech@parker.com	Contact PTO Manufacturer	Contact PTO Manufacturer
	Muncie Power Products Technical Service 1-800-FOR-PTOS, info@munciepower.com	Contact PTO Manufacturer	Contact PTO Manufacturer
Internal Transmission Fluid Temperature Monitor		Yes	Yes

Notes:

(1) Consult the https://www.fleet.ford.com/truckbbas/index.htm for more complete detail
(2) Consult the PTO manufacturers for more complete detail

F650/750 SUPER DUTY
PTO MOUNTING DIMENSIONS (Cont'd)
GASOLINE ENGINE & 6.7L DIESEL ENGINE



GEAR DATA	TORQUE SHIFT 6-SPEED AUTOMATIC
Number Of Teeth	52
Gear Ratio	1
Pitch Diameter	108.472 rpm
Pressure Angle	19.339 degrees
Angle and Hand of Helix	RH-Spur Gear
RPM @ 1000 Engine RPM	1000

2017 Content Shown
2018 Content Pending

NOTES — [ ] DIMENSIONS ARE INCHES.

60
F650/750

F650/750 SUPER DUTY
ELECTRICAL WIRING GENERAL PRACTICES
ADDITION OF LIGHTS OR ELECTRICAL DEVICES

2018
MODEL YEAR

ELECTRICAL WIRING GENERAL INFORMATION
F650/750 vehicles are equipped with a number of conveniently located electrical wiring taps. Most taps are fused, having locations under the instrument panel or in the body builder connections located behind the cab or at the end of the frame. The circuits behind the cab or at the rear of the frame are provided to support trailer wiring requirements or the Second Unit Body (SUB) additions. The F650/750 Circuit charts have a brief description of each circuit function, wire gauge, color code and electrical schematic.

1. The Ford starting and charging systems should not be altered.
2. The completed vehicle total electrical load must not exceed the maximum output of the alternator(s).
3. Do not route or attach electrical wires to fuel lines.
4. Engine compartment wiring must not be rerouted in any manner.
5. The 6.8L gas engine requires one or two batteries, and the 6.7L diesel engine requires two or three batteries wired in parallel for proper starting operation. These must not be isolated. Do not modify the Glow Plugs Power Circuits.
6. Ford recommends that all additional underhood and underbody wiring:
   - Be cross-linked polyethylene, or equivalent, high temperature insulation wire 125° C [257° F] minimum rating.
   - Meet SAE specifications J1128 type SXL, GXL or TXL.
   - Meet SAE J1127 type SGX or STX for battery cables.
   - Be protected with nylon convoluted tubing.
   - Be located so as to avoid or minimize restriction of airflow through the engine compartment, underbody and fuel system.
   - Be of sufficient length to be properly routed, so as not to interfere with operating zones of such components as the transmission linkage.
   - Not be routed near the exhaust system or any other source of high heat; melted insulation can result in electrical shorts and system failure.
   - Be routed away from hostile surfaces and sharp edges and be secured in its intended location.
   - Be protected by rubber grommets when it passes through body or frame openings. Use customer access pass-thru circuits provided to avoid additional openings between passenger and engine compartments.
   - Be protected from electrical shorts by fuses or circuit breakers.
   - Be routed at least 38 mm [1.5 in] away from engine.
7. Interior wiring not exposed to high temperatures may be SAE approved, general purpose wire.
8. Ground the second unit body to the frame in at least two locations, and if required, add an additional frame to engine ground cable to improve the ground path to the battery.
9. Splicing into circuitry relating to the powertrain control systems is not acceptable because of the adverse effect on the electrical system operation.
10. Batteries must be disconnected before welding to body and chassis components. Note that disconnecting the batteries will result in a memory loss on electronic engine/transmission controlled vehicles. Refer to The 2016 and later F650/750 Cutting and Welding bulletin available at www.fleet.ford.com/truckbbas under the "Bulletins" tab. The vehicle will require several miles of driving in various driving modes to restore its memory and regain optimum operating conditions.
11. Electrical connections exposed to the elements should be appropriately protected.
12. Do not ground the body to the transmission or transmission crossmember.
13. Ignition circuit of any engine should not be altered.
14. Alternator circuit wiring must not be altered by cutting, soldering or splicing.
15. Some head lamps are plastic and have protective coatings which can be damaged by solvents or tape. Refer to the Owner's Guide for proper cleaning procedures.
16. For convenience, F650/750 has (2) 14-gauge blunt cut pass through circuits located above the drivers footwell. These are unfused, and run to the body builder connector which is either behind the cab or at the end of the frame. See the Customer Access Circuits charts for further information regarding pass-thru circuits.
17. Electrical bulbs are listed in the Owner's Manual Bulb Chart. Check for the "DOT" marking on the bulb base which means the bulb meets U.S. "DOT" standards. Bulbs without the "DOT" marking or that produce different colors other than the original bulbs as listed in the bulb chart, may affect the lamps light output, aim, glare and your safety; in addition, such bulbs may burn out early or damage the lamp.
18. F650/750 vehicles are equipped with a clean tachometer output (CTO) wiring tap. The tap is designated circuit CE913 (BU) and is located under dash near the drivers footwell. This tap should be used if a tachometer signal is required. The signal is digital and requires a digital tachometer. The signal pulse rate is half the number of engine cylinders per revolution (i.e., 4 for 6.7L diesel, 5 for 6.8L gasoline).
19. F650/750 vehicles are also equipped with a vehicle speed out (VSO). The VSO tap is designated circuit VMC05 (VT/OG). The tap is located under dash near the drivers footwell. The VSO tap signal frequency is 2.22 times the vehicle speed in miles per hour.

Additional Electrical information can be accessed via the web at: **www.fleet.ford.com/truckbbas** under the "Bulletins" tab.

F650/750 SUPER DUTY
ELECTRICAL WIRING GENERAL PRACTICES
ADDITION OF LIGHTS OR ELECTRICAL DEVICES

This section provides instructions for the addition of electrical devices to the vehicle electrical system by body builders.
Vehicles stored on site should have the negative battery cable disconnected to minimize a "Dead Bat tery" si tuat ion. Thi s appl ies t o bot h "incomplete" and "complete" vehicles in storage.
After all electrical or vehicle modifications, perform on-board diagnostics to the Body Control Module (BCM). Road test vehicle and re-run the on-board diagnostics to verify that no DTCs are present. If DTCs are generated perform the appropriate diagnostic procedures and repairs. Vehicle operation (engine, transmission and vehicle lighting) may be affected if DTCs are not serviced.

F/CMVSS, U.S. and Canadian RFI Requirements

1. All Ford vehicles built and fully completed by Ford comply with F/CMVSS No. 108, "Lamps, Reflective Devices and Associated Equipment" and other applicable F/CMVSS that affect electrical components. Care must be taken that modifications do not conceal, alter or change components installed or provided by Ford Motor Company to achieve this conformance.
2. Incomplete vehicles (i.e., Chassis Cab, Stripped Chassis, etc.) will conform to the F/CMVSS according to the provisions and conditions stated in the Incomplete Vehicle Manual (IVM) attached to each incomplete vehicle.
3. Devices that emit radio frequency (RF) energy, such as AM/FM radios and radio-controlled security systems, marketed for sale or use in the United States are subject to the rules and regulations of the Federal Communications Commission (FCC) 47 CFR Parts 2 and 15.
   These rules specify the following conditions of operation:
   This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   (1) This device may not cause harmful interference, and
   (2) this device must accept any interference received, including interference that may cause undesired operation.
   In addition, the FCC's Rules may require the device to be tested and found to comply with various RF interference emission limits before it may be marketed. The FCC establishes different limits according to the particular use and installation of RF devices. In some cases, a grant of equipment authorization from the FCC also must be obtained before any RF device may be marketed. Labeling with certain FCC information may also be required.
   To ensure continued compliance with the FCC's requirements, the owner, user, custom manufacturer, or service technician must not modify or change the RF device in a manner not expressly approved by Ford Motor Company. Such modifications could void the authority to operate the device.
4. All vehicles powered by spark ignition internal combustion engines (e.g., gasoline or liquid petroleum gas engines) and manufactured in Canada or for sale or use in Canada are subject to the Canadian "Regulations for the Control of Interference to Radio Reception" per Interference-Causing Equipment Standard (ICES-002) and applicable test method according to "CAN/CSAC108.4-M06". Violation of these regulations is punishable by fine or imprisonment. Ford-built incomplete vehicles other than stripped chassis are designed and manufactured to be capable of meeting the regulatory requirements or such modifications thereof as may be authorized by the Canadian Department of Communications. However, because Ford has no control over how an incomplete vehicle is completed by subsequent stage manufacturers, Ford does not represent that the completed vehicle incorporating the Ford-built component s wi l l compl y wi t h appl icabl e requirements.

Routing & Clipping

5. It is strongly recommended that wiring in areas of heavy rework, or in areas where welding operations are to be performed, be removed prior to the rework operations and reinstalled after the rework is completed. The Instrument Panel (IP) cluster, Power Control Module (PCM), Ancillary Translator Module (ATM), and Body Control Module (BCM) must be disconnected before any electrical welding is performed, otherwise module damage may result. If wire removal is not practical, the wires must be shielded from damage due to the rework and welding heat. All components and wiring should be reinstalled as closely as possible to the way it was installed before removal. Refer to The 2016 and later F650/750 Cutting and Welding bulletin available at www.fleet.ford.com/truckbbas under the "Bulletins" tab.
6. Wire routings of newly installed components or wire routing revisions of the Ford harnesses necessitated by reworks must conform to the following:
   - Wires routed through holes in sheet metal or castings must have the hole edges protected by a grommet.
   - Wires should be routed to avoid metal edges, screws, trim fasteners and abrasive surfaces. When such routings are not possible, protective devices (shields, caps, etc.) must be used to protect the wires and when wires must cross a metal edge the edge should be covered with a protective shield and the wiring fastened within 3 inches of the edge.
   - Wires must be routed to provide at least 3 inches clearance to moving parts, unless positively fastened or protected by a conduit.
   - Existing heat shields, insulation, and wire shielding/twisting must be maintained.
   - Wire routings should avoid areas where temperatures exceed 85° C [180° F] and a minimum clearance of 231 mm [6 in] should be maintained from exhaust system components. Where compliance with this requirement is not possible, high temperature insulation and heat shields are required.
   - When wiring is routed between two members where relative motion can occur the wiring should be secured to each member, with enough wire slack to allow flexing without damage to the wire.
   - Wiring to all circuit components (switches, relays, etc.) in exposed locations must provide a drip loop to prevent moisture from being conducted into the device via the wire connection.
   - Routing wires into areas exposed to wheel wash should be avoided. When such routings cannot be avoided, adequate clipping or protective shields are required to protect the wires from stone and ice damage.
   - The wire retainers and grommets installed by the assembly plant are usually designed to accommodate only the Ford-installed wires. Additional wiring or tubing should be retained by additional clips. When added wires or tubes are routed through sheet metal panels, new holes, with proper wire protection and sealing, must be used.
   - All wiring connections to components of the factory-installed system must be accomplished by using the proper mating wire termination. (Connections on studs and ground connections must use eyelet terminations, connections to female bullets must terminate in male bullets, etc.)

Splice/Repair

When necessary to splice wire for repair or circuit length revisions, the following guide should be followed:

- Wire ends should be stripped making sure that individual conductor strands are not damaged.
- When soldering, make sure an adequate mechanical joint exists before applying solder. Use only rosin core solder — never acid core.
- For crimp joints, use butt-type metal barrel fasteners and a proper tool (such as Motorcraft crimp tool S-9796) specifically designated for this type of work.
- Splice joints must be adequately sealed and insulated. Adhesive-lined heat shrink tubing is highly recommended to cover soldered and bare metal barrel crimp joints.
- The most durable splice joint will be bare metal barrel crimped, flow-soldered and covered with adhesive lined heat shrink tubing. This is recommended as the preferred splice joint.

Circuit Protection

1. Modification to existing vehicle wiring should be done only with extreme caution and consideration of effects on the completed vehicle electrical system. Anticipated circuitry should be studied to ensure that adequate circuit protection will exist and that feedback loops are not created.
2. Any added circuitry must be protected by a fuse or circuit protection device installed by the bodybuilder.
3. **Never** drive additional electrical load directly from the Body Control Module (BCM) output. The BCM output must drive an auxiliary relay coil only. If you try to drive an aftermarket electrical load directly, the BCM will likely disable the output and you may have to replace the BCM.
4. Never increase the rating of a factory installed fuse or circuit breaker.
5. For added lamp loads, the "Bulb Chart" on a following page will aid in determination of common lamp current draws.
6. It is the body builder's responsibility to use sound engineer ing judgment when making any modifications to a vehicle, and the body builder is responsible for ensuring that all modifications made are appropriate for the intended vehicle application.

Guidelines for Powertrain Control System Application

All Powertrain Control Module (PCM) wiring, in particular the 12A581 and 14401, must be a minimum of 51 mm [2 in] from secondary ignition coil wires and at least 102 mm [4 in] from the distributor, ignition coil tower, starter motor and starter motor wiring as well as 102 mm [4 in] from the alternator output wiring. These clearances apply in particular to all PCM sensor and actuator pigtail wiring. PCM wires shall not be in the same bundle as other high-current non-PCM circuits (e.g., tachometer wire from coil to Thick Film Ignition Module (TFI), power seat/ door lock/window, horn, alternator regulator) for a distance of more than 20 inches.

Additional Electrical information can be accessed via the web at: www.fleet.ford.com/truckbbas under the "Bulletins" tab.

NOTE: The final stage manufacturer is responsible for ensuring that the final vehicle configuration meets all applicable regulatory requirements.

F650/750 SUPER DUTY
ELECTRICAL WIRING GENERAL PRACTICES
ADDITION OF LIGHTS OR ELECTRICAL DEVICES (Cont'd)

Modern Ford vehicle electronic controls provide Ford customers with superior reliability and diagnostic capability when vehicle modifications are performed in line with the recommendations detailed here. Many traditional modification methods may no longer be compatible with these modern electronic modules.
Although there are many points in the truck electrical system to connect additional circuits certain connection points are recommended for reliability and convenience. This section defines the recommended connection points for each Ford Truck model and the maximum electrical loads allowable.

CAUTION: Improper electrical tie-ins may affect vehicle operation (i.e., engine, transmission, lighting).
After all electrical or vehicle modifications, perform the on-board diagnostics procedures as described in the powertrain control/emissions diagnosis manual to clear all diagnostic trouble codes (DTCs). In addition, perform self-test to the BCM and test all lighting outputs. Road test vehicle and rerun the on-board diagnostics to verify that no DTCs are present. If DTCs are generated, perform the appropriate diagnostic procedures and repairs. Vehicle operation (engine, transmission, lighting) may be affected if DTCs are not serviced.
Alternative connections or wiring practices are not recommended as these modifications will result in other circuits becoming non-functional. Disconnect the battery negative (ground) cable and remove it from the battery carrier prior to any vehicle modification. Upon completion of body or equipment installation, all wiring should be checked for proper routing, etc. to preclude electrical shorts upon re-installation of the battery negative cable.
Do not splice into the Powertrain System (PCM-V). Connecting to any component or wires to this system may adversely affect engine/transmission operation. Likewise, do not splice into any lighting circuits as this may permanently disable the lighting circuits within the Body Control Module (BCM). Proper modification practices are fully described in this layout book.

LIGHTS CONTROLLED BY HEADLAMP SWITCH

● F650/750

The headlamp switch used on the Super Duty F-Series vehicles is a low current switch designed to signal the Body Control Module (BCM) to activate all exterior lighting. The left-hand and right-hand low beam lamps are then fused individually using 10A fuses located in the BCM fuse box. The high beam lamps are fused using a separate 15A fuse while the interior lamps are fused using 10A fuses located in the BCM fuse box. A connection to any circuit in the system controlled by the headlamp switch must be done using an auxiliary relay. Any connection must be performed on the lighting output of the BCM. Additional loads connected to the headlamp switch will damage the headlamp switch.
A park lamp relay circuit CAT17 for SUB additions is provided for convenience as standard equipment in the body builder connector. Do not connect to other OEM wires.

LIGHTS CONTROLLED BY STOP LAMP SWITCH AND TURN INDICATOR SWITCH

NOTE: Splicing into the stop lamp switch can damage the Body Control Module (BCM). Splicing into the stop lamp switch on vehicles with Electronically Controlled Transmissions can interfere with the proper functioning of PCM, speed control, and anti-lock brake electronic modules. This can:

- Affect EFI engine idle speed quality.
- Prevent the Powertrain Control Module (PCM) controlled torque converter clutch from applying at throttle openings less than half-throttle.
- Deactivate anti-lock brake system operation.
- Prevent the speed control from disengaging upon braking.

A stop signal, as well as a reverse and left/right turn or stop/turn circuits are located in the body builder connector
The stop lamp switch that is in use on Ford trucks is a mechanical switch operated by brake pedal. The BCM supports adding loads to the brake pedal switch through Blunt cut circuit A_CBP31, BU/OR (5A fuse), located in the driver footwell. A park brake signal circuit is available as a blunt cut wire (CMC25, WH/VT0 located in the driver footwell. Tapping into other BCM inputs, such as Door Ajar, can cause BCM failure. Under no circumstances are additional brake pedal loads to be added by directly splicing into vehicle wiring.

F650/750 Models with Hydraulic Brakes

Ford trucks are released with a mechanical stop lamp switch which contacts the brake pedal arm. If only stop lamp function is desired for the added lights, connect to circuit A_CBP31 BU/OR located at the customer access blunt cut wires in the driver footwell (for a signal circuit), or A_CCB08 VT/WH located in the body builder connector (to power lamps).
The turn signal switch is designed to use a low current to signal the BCM to activate turn signal and stop lamps. The switch is not designed to directly power any lamps or other electrical devices.
If both turn signal and stop lamp function are desired for added lights, access the body builder connector located behind the cab or at the end of frame. Do not splice into turn/stop circuits at the BCM or turn circuits at the multi-function switch. Splicing in those areas will damage the switch or cause the BCM to malfunction. Use the trailer tow circuits and trailer tow relays to power added turn/stop lights. Circuits are accessible at the body builder connector located behind the cab or at the end of frame; LT/Stop=YE, RT/Stop=GN.
Reverse/back-up lights must be tied-in using trailer tow relays and circuits in same manner as turn/stop lights.

ADDED LIGHTS OR ACCESSORIES CONTROLLED BY ADDED SWITCHES

This section describes the connection points for added electrical accessories when these accessories are to be controlled by added switches not a part of the Ford-released vehicle. The added switches and wiring must have sufficient electrical capacity for the accessory load and must be tied to the battery using separate fuses and a circuit protection device. Additional loads on Ford provided fuses may cause permanent BCM damage and lighting failure. Also, added current draw must not cause total loads to exceed capabilities of the base vehicle wiring.

WIPER DELAY MODULE – F650/750

The Wiper Delay Module is not internally protected for a continuous high current load greater than 9 amps and must be protected either internal to the wiper motor or via inline protection such as a properly sized circuit breaker. The existing 30 amp fuse in the fuse panel is sized for the maximum allowable in-rush current and does not provide appropriate protection to the Wiper Delay Module.

MALFUNCTION INDICATOR LIGHT (MIL)

The “Malfunction Indicator Light” is used to indicate malfunctions of the engine’s emission control system and certain powertrain emissions-related components. For all incomplete vehicles, the MIL is Ford-installed and operational in the instrument panel.

RADIO FREQUENCY INTERFERENCE (RFI)

During modifications to the vehicle, manufacturers, service technicians, owners and users should take the necessary precautions to maintain the RFI integrity of components. Both the United States and Canada have RFI regulation in effect. For any completed vehicle, additional measures may be needed to adequately suppress RFI emissions. Affected components could include spark plugs, ignition wires, ignition coils, ground straps, ignition components shields, accessory drive belts, ignition coil suppressors, the Powertrain Control Module (PCM), Ancillary Translator Module (ATM), and the Body Control Module (BCM). Guidance for installing two-way mobile radios can be found via the web at www.fordemc.com/docs download/Mobile_Radio_Guide.pdf.

2017 Content Shown
2018 Content Pending

Additional Electrical information can be accessed via the web at: **www.fleet.ford.com/truckbbas** under the “Bulletins” tab.

NOTE: The final stage manufacturer is responsible for ensuring that the final vehicle configuration meets all applicable regulatory requirements.

F650/750 SUPER DUTY
ELECTRICAL WIRING GENERAL PRACTICES
ADDITION OF LIGHTS OR ELECTRICAL DEVICES (Cont'd)

ELECTRICL LOAD LIMITATIONS

If the **total** electrical load on a factory circuit, after the addition of electrical equipment, is less than 80% of the fuse or circuit breaker protection rating in that circuit or less than the capacity of some limiting component (switch, relay, etc.), the items to be added can be connected directly to that circuit. For fuses located in the engine compartment, the electrical load should not exceed 70% of the fuse or circuit breaker protection rating. If the total electrical load to be added on a factory circuit exceeds the value of the circuit protection, or the value of some limiting component, the items to be added **cannot** be added directly to the circuit.

- Additional loads cannot be driven by the Body control Module (BCM), they must be driven by an auxiliary relay. The coil of the relay can be fed from the factory wiring (now acting as a signal circuit) with the added wiring providing the power feed to the added electrical device through the relay power contacts. (The relay selection is important and depends on current requirements, number of cycles expected in the relay lifetime, whether the relay is to be operated intermittently or for long periods of time, and whether the relay is exposed to weather conditions or is installed in a protected area. When the current requirements of a circuit exceed the capacity of an available relay, more than one relay can be used if the circuit is wired to split the load).
- The factory wiring should not be used as a power feed to the relay power contacts or switches. Battery power is to be supplied from the starter motor solenoid positive terminal for added circuits requiring a maximum of 30 amps or directly from the battery positive terminal for added circuits requiring greater than 30 amps of current.

Caution: Never use the stud on the underhood fuse panel as a junction point.

Circuit protection (fuses or circuit breakers) must be provided for all added wiring. The protection device rating should not exceed the current requirements for the add-on components and should be installed as close to the point of tapped power as possible.

Wire Gage

1. When adding wiring, the wire gage size should be determined as follows:
   - Where wire is spliced to extend a circuit, the added wire should have a gauge at least that of the circuit being lengthened.
   - When wire is being added to feed add-on devices, the Wire Gage Table on this page should be used.

NOTE: The current capacity of a given wire varies with temperature and type of insulation. The table, however, represents generally accepted values as a guide.

2. All added underhood or underbody wiring should have a thermostat insulation (such as Hypalon or Cross-linked polyethylene).
   The following specifications typically apply:
   - SAE specifications J1128 type SXL, GXL or TXL except for battery cables
   - SAE specifications J1127 type SGX or STX for battery cables.

WIRE GAGE TABLE

Wire Gage	Maximum Current Capacity (Plastic Insulated Copper Wire)
20	10 Amps
18	10 Amps
16	10 Amps
14	10 Amps
12	10 Amps
10	10 Amps

BULB CHARTS

BULB TRADE NUMBER	CANDLE POWER	CURRENT @ RATED VOLTAGE
67/97	4	0.69 A @ 13.5V
168	3	0.35 A @ 14.0V
192	3	0.33 A @ 13.0V
194	2	0.27 A @ 14.0V
211-2	12	0.97 A @ 12.8V
212-2	6	0.74 A @ 13.5V
578	9	0.78 A @ 12.8V
579	9	0.8 A @ 12.8V
904	4	0.69 A @ 13.5V
904NA	5.3	0.69 A @ 13.5V
906	6	0.69 A @ 13.5V
912	12	1.0 A @ 12.8V
916	2	0.54 A @ 13.5V
916NA	1.5	0.54 A @ 13.5V
921	21	1.4 A @ 12.8V
922	15	0.98 A @ 12.8V
1157A (major)	24	2.1 A @ 12.8V
1157A (minor)	2.2	0.59 A @ 14.0V
3057 (major)	32	2.1 A@ 12.8V
3057 (minor)	32	2.1 A@ 12.8V
3057K (major)	32	2.1 A@ 12.8V

BULB TRADE NUMBER	CANDLE POWER	CURRENT @ RATED VOLTAGE
3057K (minor)	2	0.48 A @ 14.0V
3155K	21	1.6 A @ 12.8V
3156 (P27W)	32	2.1 A @ 12.8V
3157 (P27/2W) (major)	32	2.1 A @ 12.8V
3157 (P27/2W) (minor)	3	0.59 A @ 14.0V
3157A (major)	24	2.1 A @ 12.8V
3157A (minor)	2.2	0.59 A @ 14.0V
3157K (major)	32	2.1 A @ 12.8V
3157K (minor)	3	0.59 A @ 14.0V
3456K	40	2.23 A @ 12.8V
3457AK (major)	30	2.23 A @ 12.8V
3457AK (minor)	2.2	0.59 A @ 14.0V
3457K (major)	40	2.23 A @ 12.8V
3457K (minor)	3	0.59 A @ 14.0V
3757AK (major)	24	2.1 A @ 12.8V
3757AK (minor)	2.2	0.59 A @ 14.0V
4057K (major)	32	2.23 A @ 12.8V
4057K (minor)	2	0.48 A @ 14.0V
4157K (major)	32	2.23 A @ 12.8V
4157K (minor)	3	0.59 A @ 14.0V
W5W	4	0.4 A @ 12.0V

BULB TRADE NUMBER	CANDLE POWER	CURRENT @ RATED VOLTAGE
H1	117	55W @ 12.0V
H3	121	55W @ 12.0V
HB2 (9003) (low)	76	55W @ 12.0V
HB2 (9003) (high)	125	60W @ 12.0V
9005 (HB3)	135	65W @ 12.8V
9006 (HB4)	80	55W @ 12.8V
9007 (HB5) (low)	80	55W @ 12.8V
9007 (HB5) (high)	107	65W @ 12.8V
H13/9008 (low)	-	55W @ 12.8V
H13/9008 (high)	-	65W @ 12.8V
H7	125	55W @ 12.0V
H9	167	65W @ 12.0V
H11	107	55W @ 12.8V
H6054 (low)	-	55W @ 12.8V
H6054 (high)	-	65W @ 12.8V
9140	48	40W @ 12.8V
9145 (H10)	65	45W @ 12.8V

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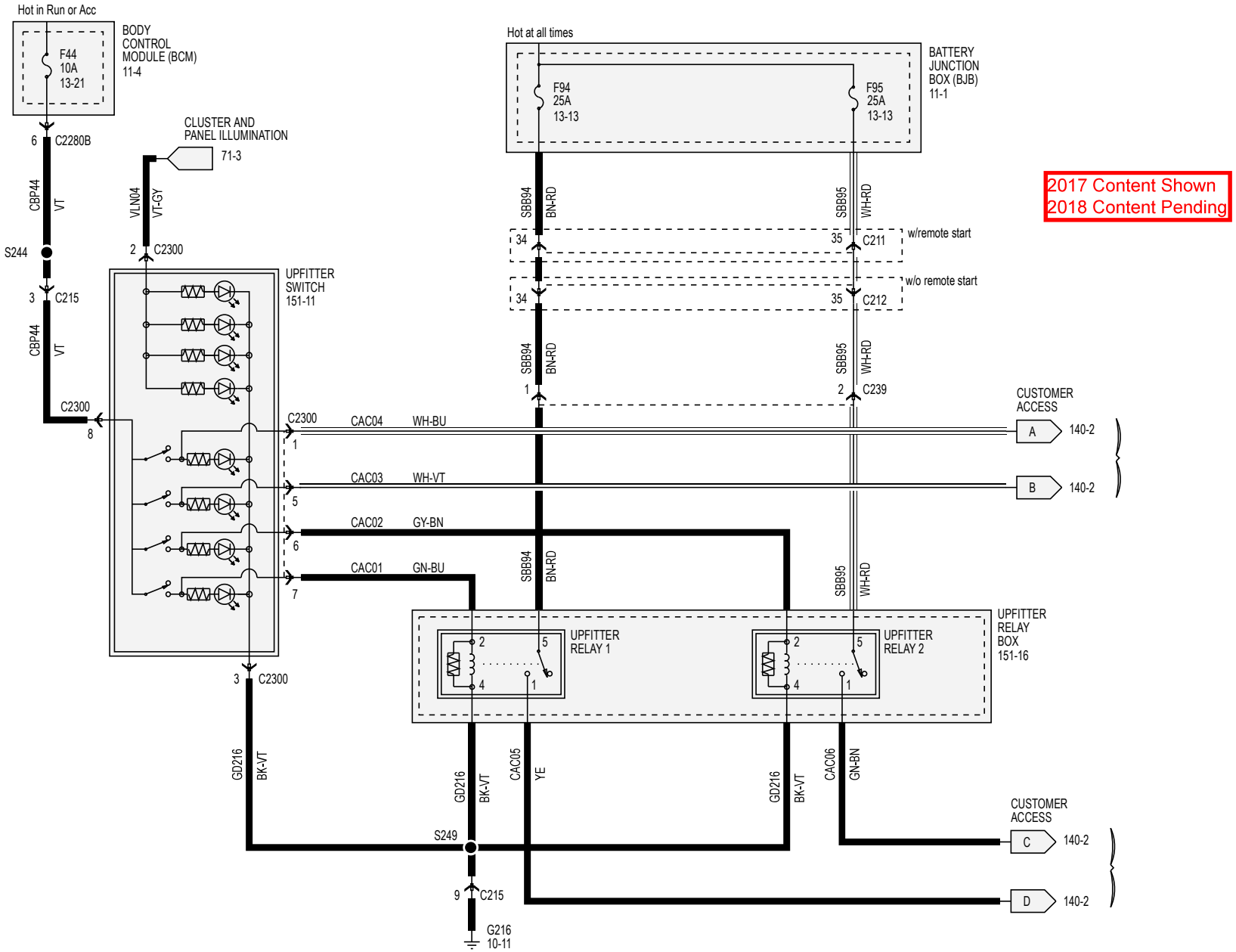
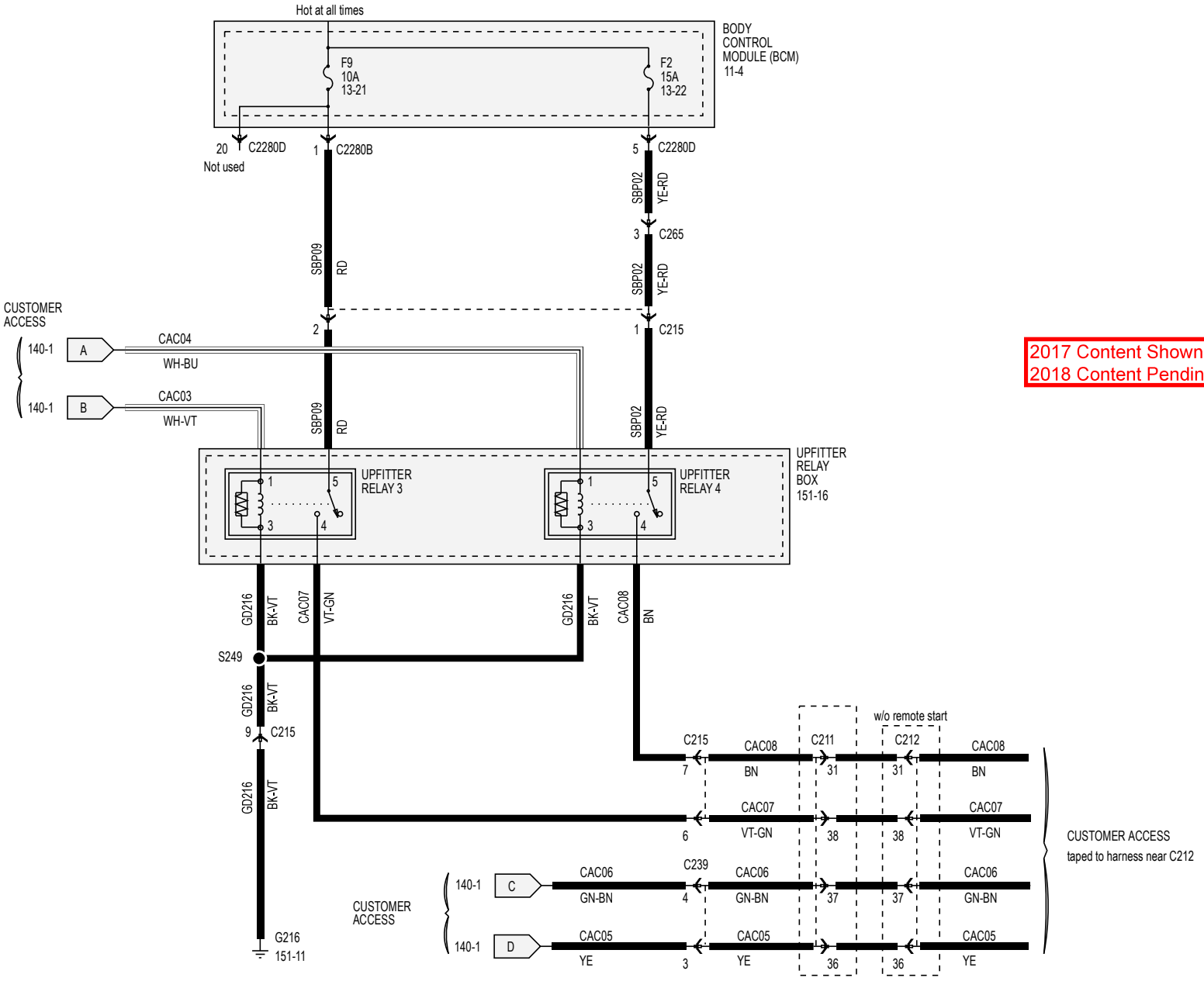
Additional Electrical information can be accessed via the web at: www.fleet.ford.com/truckbbas under the “Bulletins” tab.

NOTE: The final stage manufacturer is responsible for ensuring that the final vehicle configuration meets all applicable regulatory requirements.

F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)



F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)



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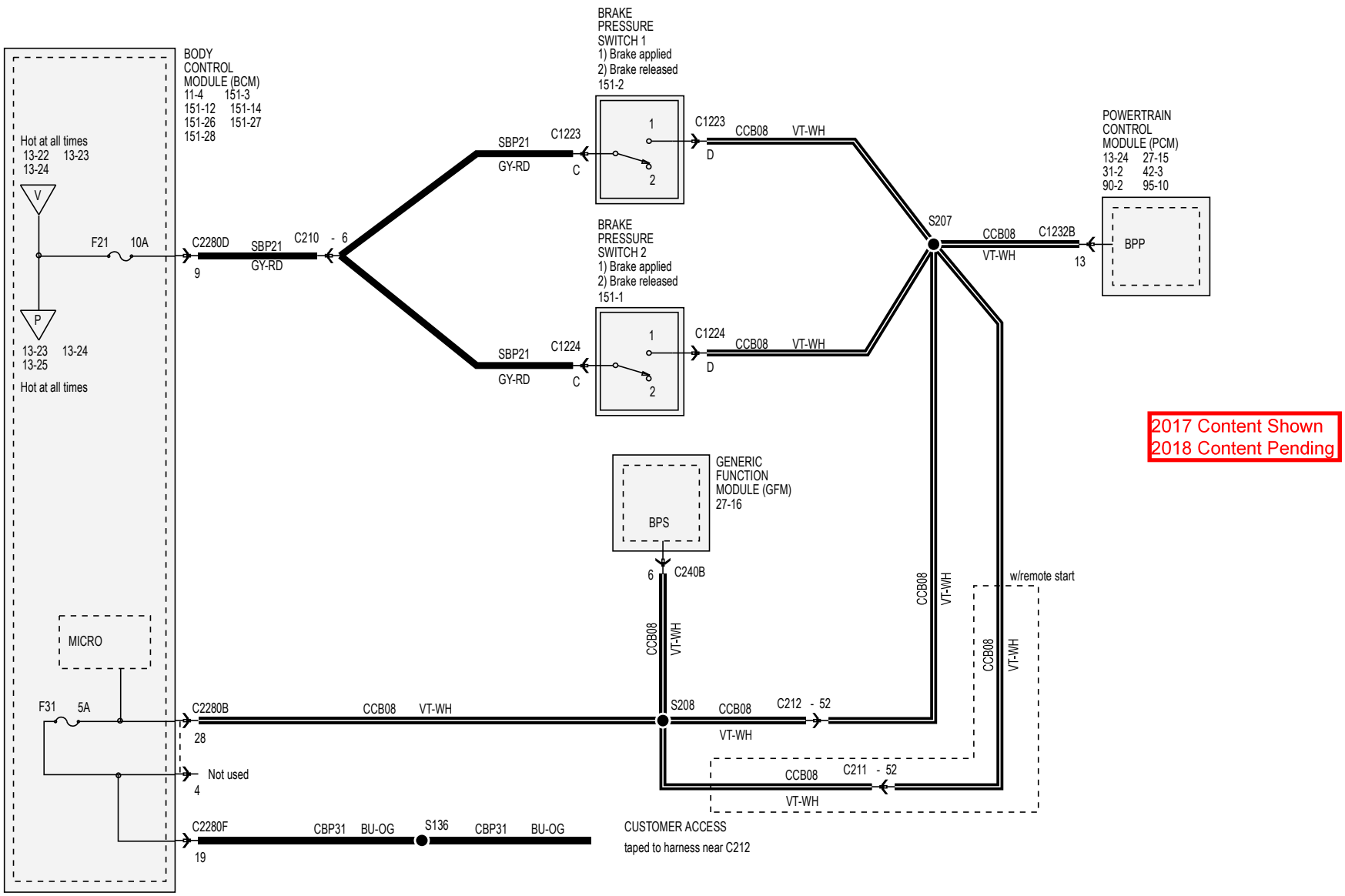
F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

AIR BRAKES



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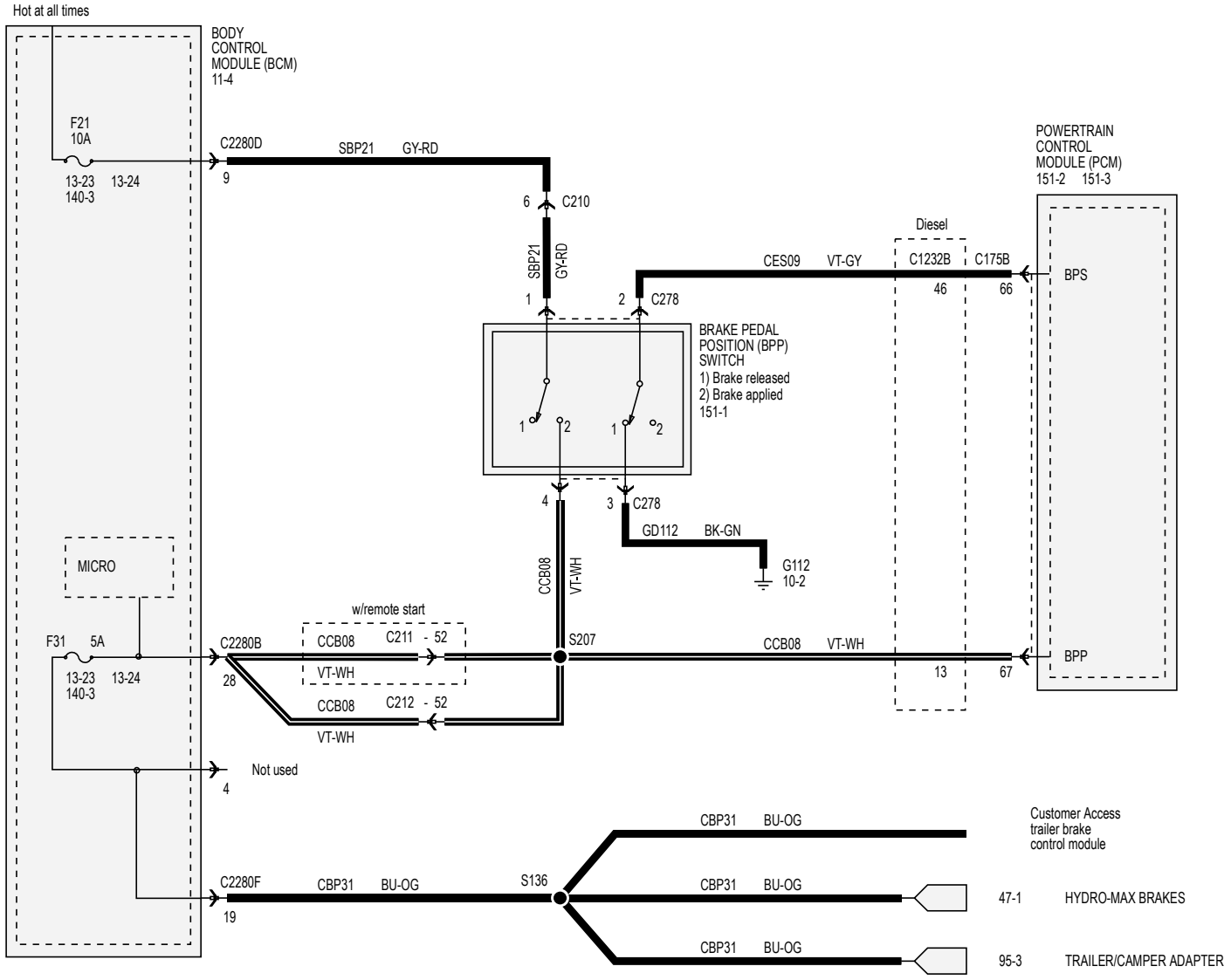
F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

HYDRAULIC BRAKES



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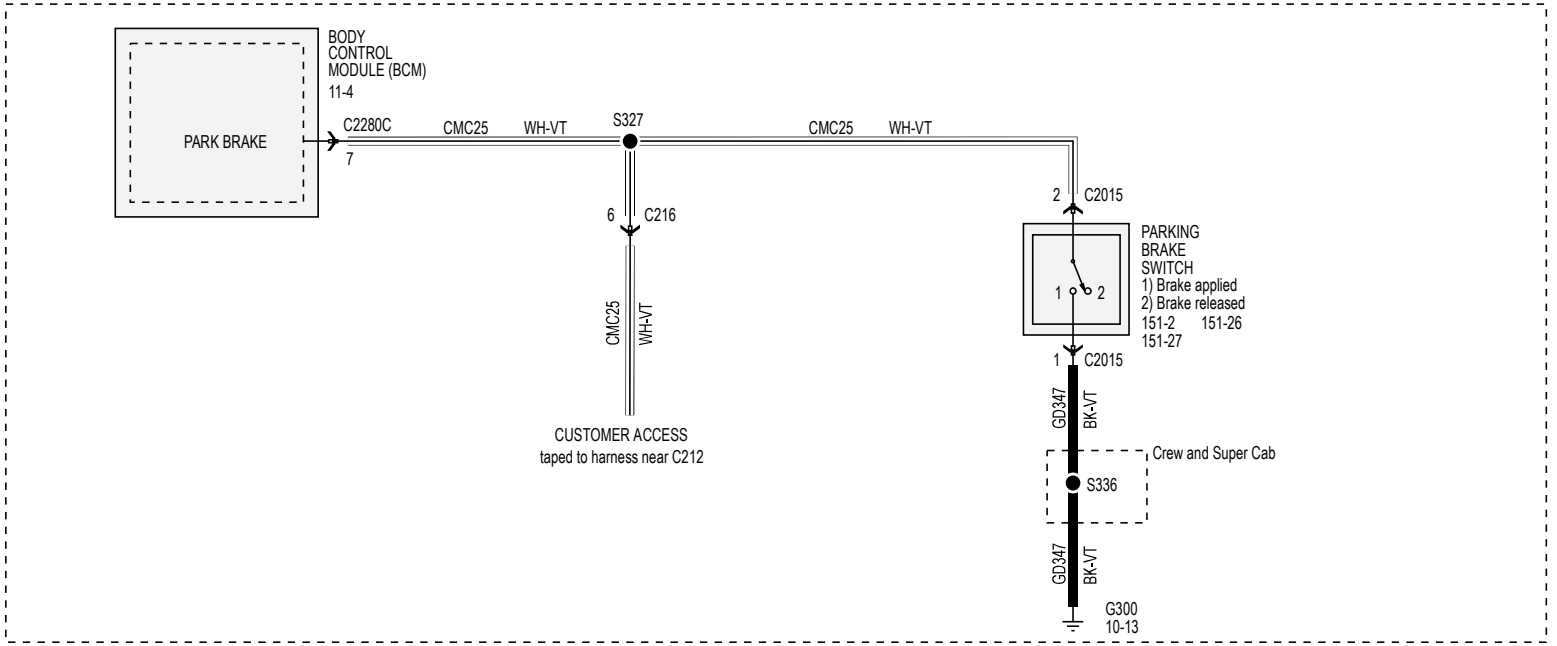
F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

Hydraulic Brakes



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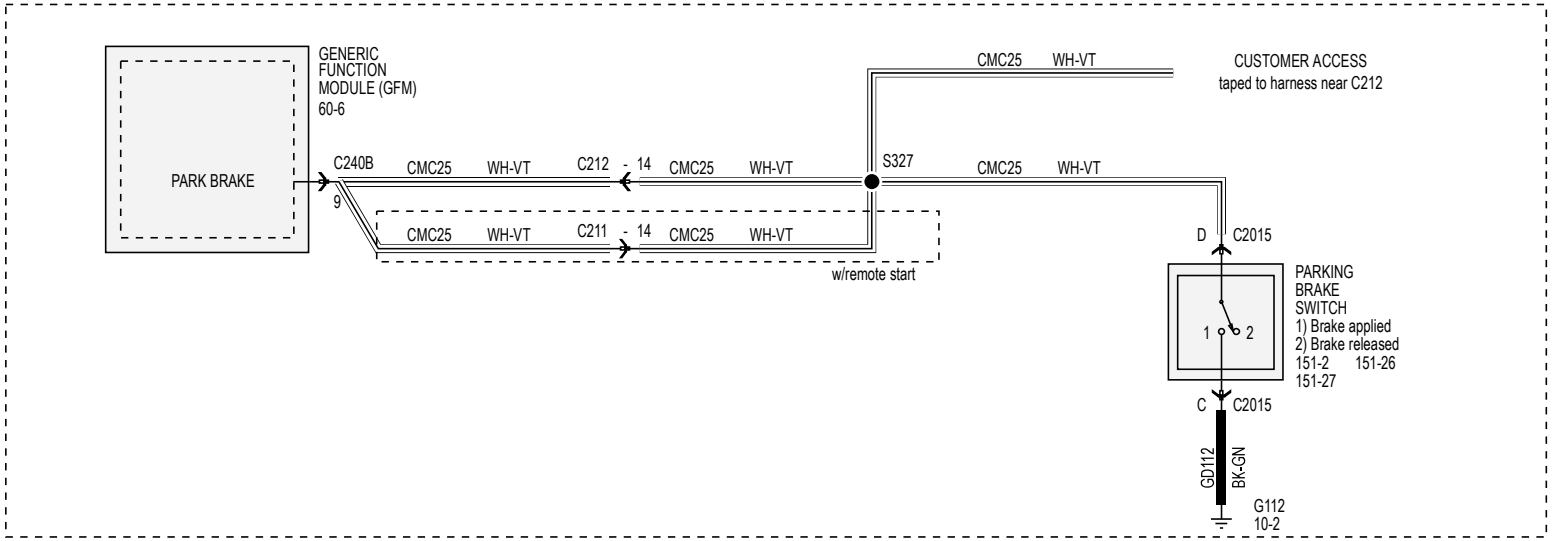
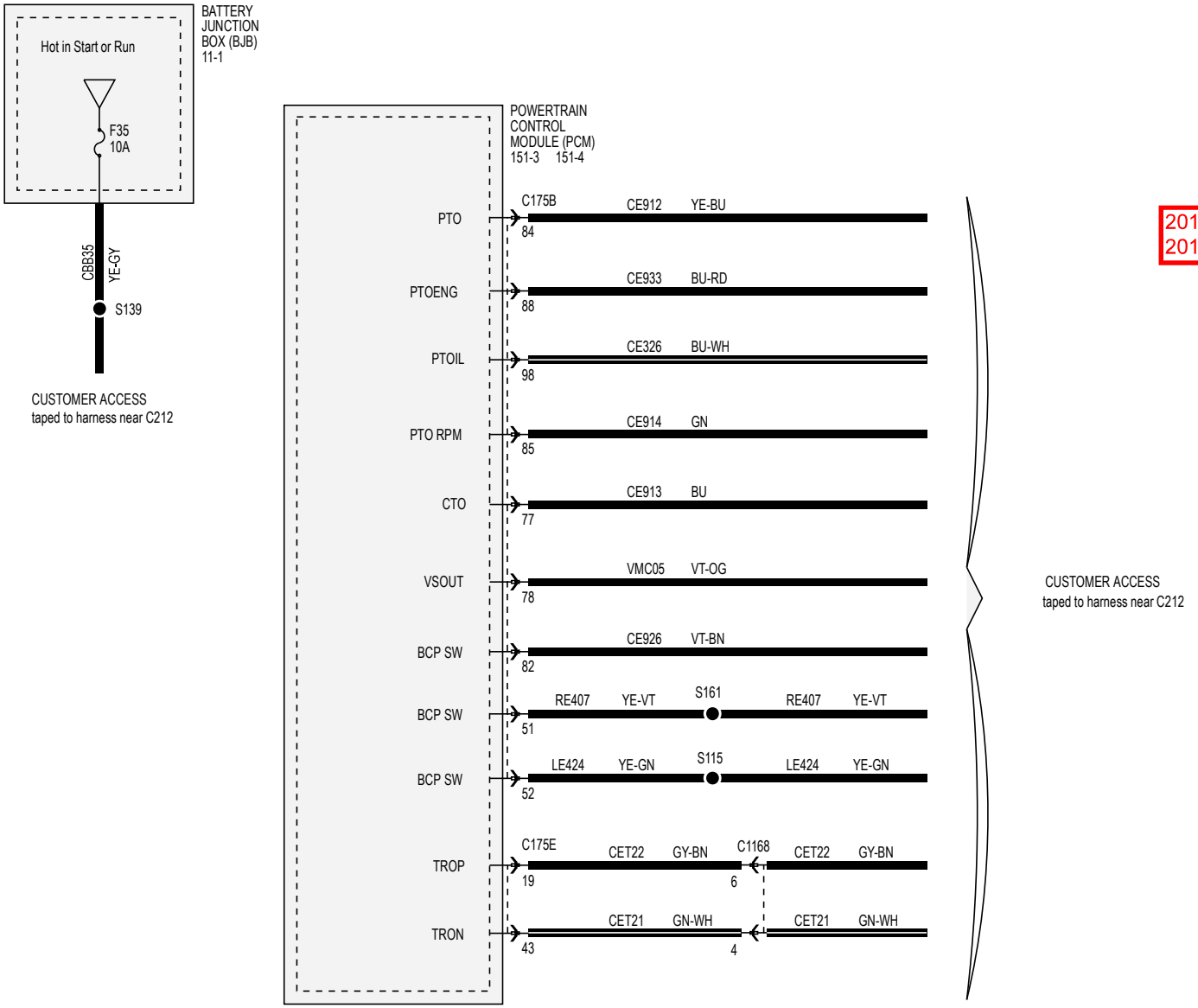
Air Brakes



F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

GASOLINE



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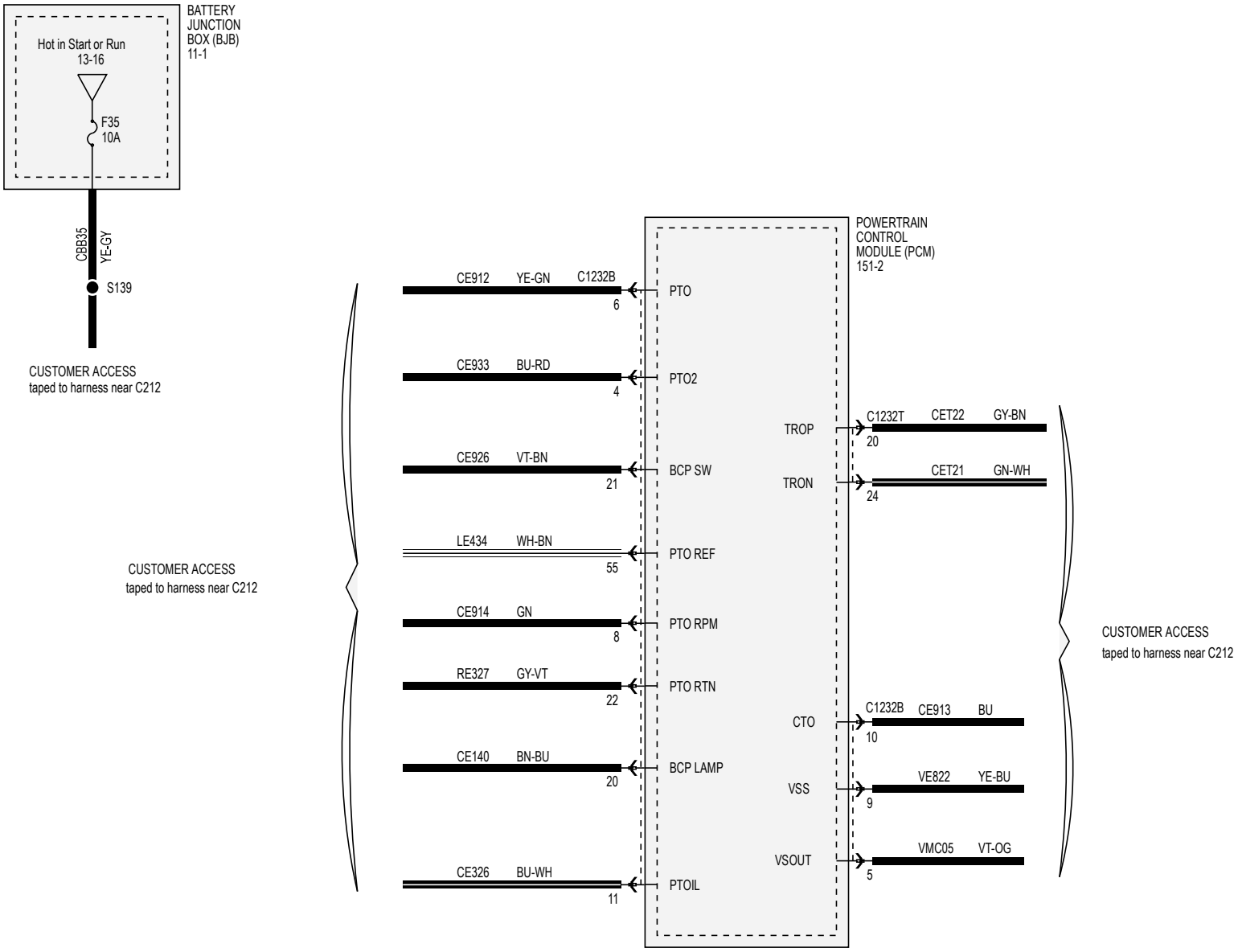
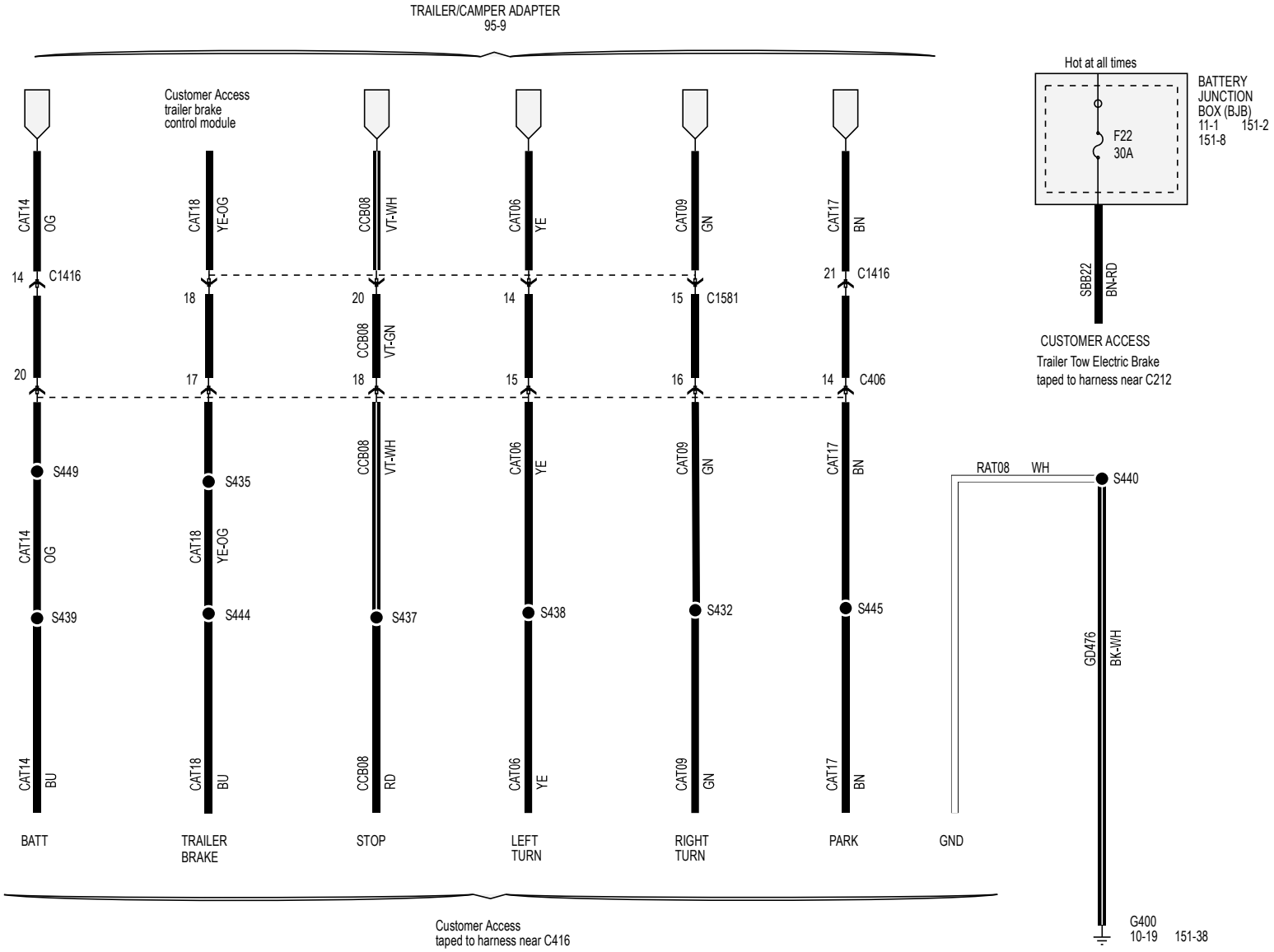
F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

DIESEL

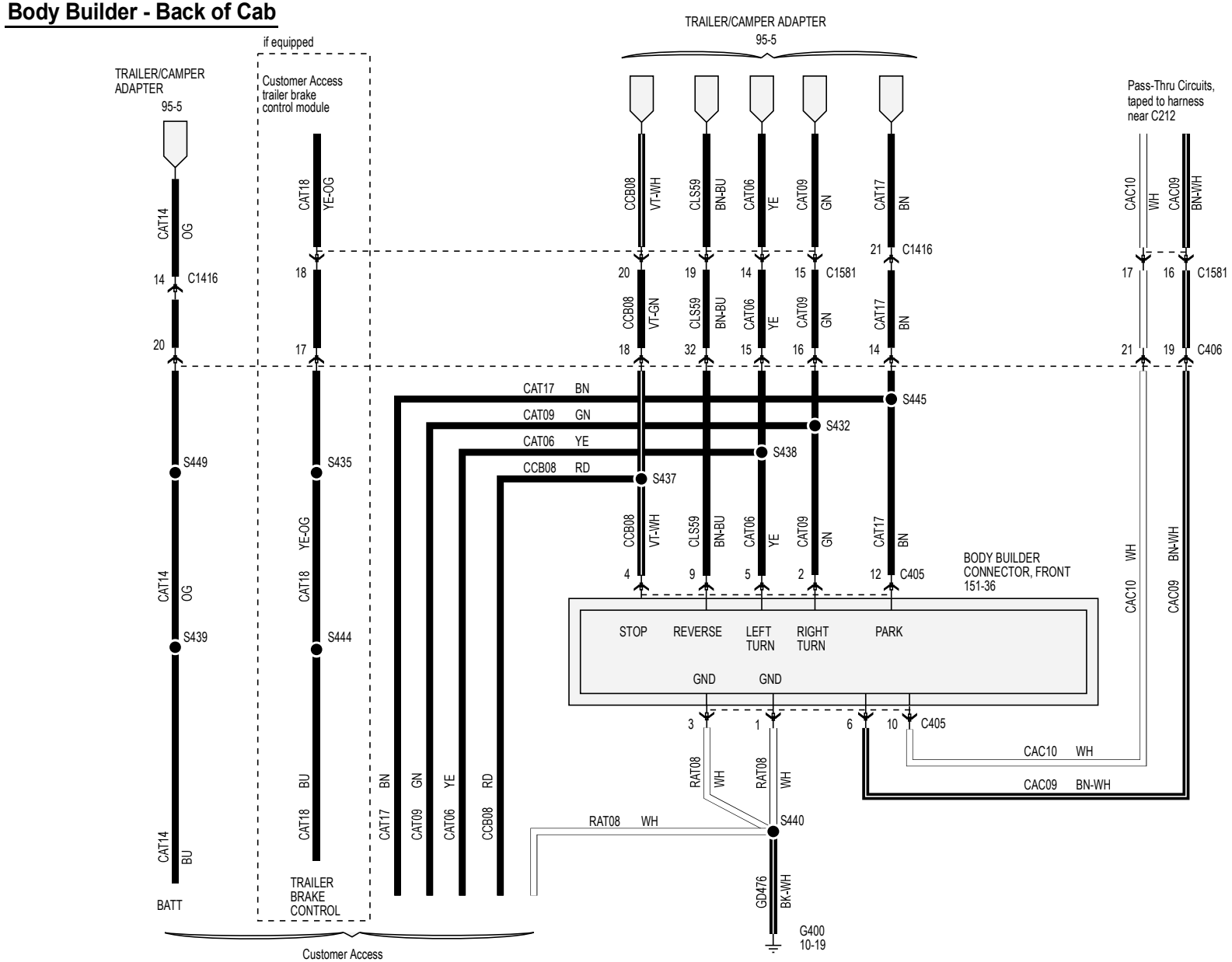


F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)



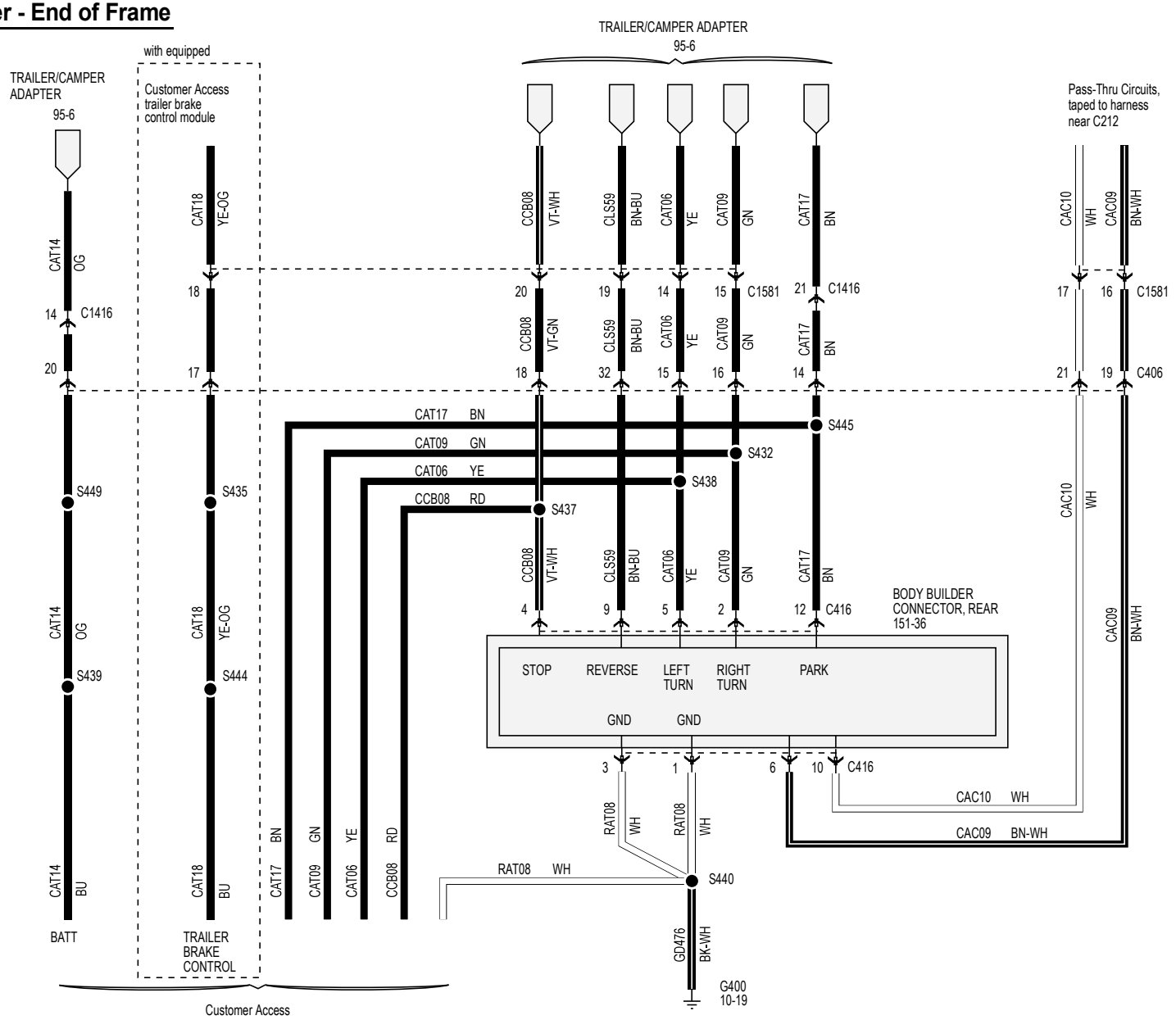
F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

Body Builder - Back of Cab



F650/750 SUPER DUTY
ELECTRICAL WIRING
CUSTOMER ACCESS SCHEMATICS (Cont'd)

Body Builder - End of Frame



74
F650/750

F650/750 SUPER DUTY
F650/750 STATIONARY ELEVATED IDLE CONTROL OVERVIEW

2018
MODEL YEAR

Stationary Elevated Idle Control (SEIC)

• A power train control module (PCM) strategy that provides elevated engine speed to drive auxiliary commercial equipment such as hydraulic pumps, generators, air compressors; or maintain vehicle battery charge under extreme electrical demands.

• SEIC is standard in all PCM's for F-650/750 trucks.

• 6.7L diesel only - Split shaft mode engages the transmission output shaft.

Customer Access Wires for SEIC and VSO/ CTO/PARK Signals

• Located in cabin, tagged and bundled under the driver's side dash behind data link connector. Pass-thru wires are in the same bundle.

• The final stage manufacturer or up-fitter is required to supply the customer interface equipment.

• Additional information in the "Circuit Descriptions" section.

Transmission Power Take off (PTO) Gear and Port

• Available on F-650/750.

• Available for TorqShift™ 6-speed automatic transmission by ordering "Transmission Power Take-Off Provision". The PTO gear is direct-splined to the torque converter impeller.

• NEVER use any sealer, especially silicone-based, on the PTO port gasket.

• TorqShift™ Automatic Transmission: On the 6.7l diesel engine, the PTO gear delivers up to 300ft-lbs of torque to the aftermarket PTO and 250ft-lbs of on the 6.8L Gasoline engine. The powertrain cooling system can manage the heat of 60 HP on the 6.7l diesel engine and 40 HP on the 6.8L gasoline engine during continuous operation. Higher horsepower can be delivered, but for shorter durations depending on the amount of power required.

• Some aftermarket PTO's may not be capable of using the full available torque. Consult with the aftermarket PTO supplier to ensure the appropriate PTO selected for the application.

Customer Access Circuit / SEIC Wire Locations

SEIC circuits, Customer Access Signal Circuits, Pass-Thru Wires.

F650/750
Cabin / Instrument Panel

• Blunt-cut access wires for SEIC, "Customer Access" signal circuits for CTO, VS_OUT, TRO_P, TRO_N, and 2 pass-thru wires, are bundled together at the harness on the left hand side of the driver's foot well behind the data link connector.

• Blunt-cut access wires for the 4 optional "Upfitter Switches" are also included in this bundle.

F650/750
Back of Cab or End of Frame

• The 2 blunt-cut pass-thru wires terminate at Pins 6 and 10 of the Body Builder Connector. The connector is locatedeither at the back of cab or end of frame along the left hand frame rail, depending on vehicle options. –See Body Builder Layout Book for complete pin out.

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Customer Accessible Signal Circuit Description

F-650/750 6.8L Gasoline and 6.7L Diesel

CUSTOMER ACCESS SIGNAL CIRCUITS - Found: Blunt-cut & taped, in Customer access harnessunder driver's side dash.

Wire Color	Wire Tag	Circuit No.	Circuit Intent	Description
Gray / Brown	TRO P	CET22	OUTPUT PARK-Only	6.7L Diesel - PCM Pin C1232T-20 / 6.8L Gasoline – PCM Pin C175B-19 - An output from the PCM that indicates when the Transmission Range Sensor is indicating that the Transmission is in the Park Position. The Low Side driver (160mA max.) in the PCM will pull this output to ground when active (Transmission is in the PARK Position). To properly reference this output, the customer supplied external controller/device needs to pull this output up to VPWR with a 10K Ohm resistor. Thus when the output is active, the voltage at this output will be 0 volts. When this output is not active, the output will be pulled up to VPWR by the 10K Ohm pull up resistor.
Green / White	TRO N	CET21	OUTPUT NEUTRAL-Only	6.7L Diesel - TCM Pin C1232T-24 / 6.8L Gasoline – PCM Pin C175B-43 - An output from the PCM that indicates when the Transmission Range Sensor is indicating that the Transmission is in the Neutral Position. The Low Side driver (160mA max.) in the PCM will pull this output to ground when active (Transmission is in the Neutral Position). To properly reference this output, the customer supplied external controller/device needs to pull this output up to VPWR with a 10K Ohm resistor. Thus when the output is active, the voltage at this output will be 0 volts. When this output is not active, the output will be pulled up to VPWR by the 10K Ohm pull up resistor
Violet / Orange	VS OUT	VMC05	OUTPUT Vehicle Speed	6.7L Diesel - PCM Pin C1232B-5 / 6.8L Gasoline – PCM Pin C175B-78 - An output from the PCM that provides 8000 pulses per mile signal with a 50% duty cycle. The low side driver in the PCM will switch the output off and on (off will allow the output to be pulled up close to VPWR), (on will put the output to 0 volts). To properly reference this output, the customer supplied external controller/device needs to pull this output down to ground with a 10K Ohm .resister.
Blue	CTO	CE913	OUTPUT Engine Speed	6.7L Diesel - PCM Pin C1232B-10 / 6.8L Gasoline – PCM Pin C175B-77 - An output from the PCM that indicates a Clean Tachometer Output to provide an indication of engine RPM. The low side driver in the PCM will switch the output off and on (off will allow the output to be pulled up close to VPWR), (on will put the output to 0 volts), at a Frequency = ((Engine RPM's * Number of cylinders) / 120), with a duty cycle of 50%. To properly reference this output, the customer supplied external controller/device needs to pull this output down to ground with a 10K Ohm resister.
White / Violet	PARK BRAKE	CMC25	OUTPUT Park Brake	Hydraulic Brakes - BCM Pin C2280C-7 / Air Brakes – GFM pin C240B-9 - Ground Output Signal wire - NOTE: The Body Control Module (BCM) park brake input also uses this signal The BCM park brake input cannot source any current. The body builder must provide a high impedance circuit (such as a Field Effect Transistor) with a 20 kilo-ohm or larger resistor to prevent faulting the Body Control Module. See schematic in the Body Builder Layout Book.
Brown / White	BB CAV 6	CAC09	PASS-THRU	- Pass thru wire, terminating in the body builder connector, pin 6
White	BB CAV 10	CAC10	PASS-THRU	- Pass thru wire, terminating in the body builder connector, pin 10

Battery Voltage Sources (VPWR)

F-650/750 6.8LGasoline and 6.7L Diesel

Wire Color	Wire Tag	Circuit No.	Circuit Intent	Description
Yellow / Gray	VPWR3	CBB35	OUTPUT RUN / START	- Ignition Hot-in Run / Start - 10-amp fused (F35 in PDB) circuit, found in customer access circuit harness under driver's side dash.
Yellow	UPFIT RLY 1	CAC05	OUTPUT Upfitter Switch 1	- 25-amp fused output (16awg), found in customer access circuit harness under driver's side dash.
Green / Brown	UPFIT RLY 2	CAC06	OUTPUT Upfitter Switch 2	- 25-amp fused output (16awg), found in customer access circuit harness under driver's side dash.
Violet / Green	UPFIT RLY 3	CAC07	OUTPUT Upfitter Switch 3	- 10-amp fused output (20awg), found in customer access circuit harness under driver's side dash.
Brown	UPFIT RLY 4	CAC08	OUTPUT Upfitter Switch 4	- 15-amp fused output (20awg), found in customer access circuit harness under driver's side dash.

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F650/750 SUPER DUTY

Stationary Elevated Idle Control for 6.7L Diesel,6.8L Gasoline PTO Mode Descriptions, Splitshaft PTO, and Battery Charge Protect

PTO Mode Specifications

Engine	Mode	Max. Load at Transmission PTO Gear	Minimum Engine RPM	Maximum Engine RPM
6.7L Diesel	Stationary	300ft-lbs	900	3000
	Mobile	200ft-lbs	750	3000
	Split-shaft	N/A	700	3000
6.8L Gasoline	Stationary	250ft-lbs	800	2400
	Mobile	125ft-lbs	750	2400

Operating Modes

Stationary Elevated Idle Control mode

- operates in Park at elevated engine speed. The maximum load at the transmission PTO gear are shown in the table below:

Engine	Max. Load at Transmission PTO Gear, Stationary
6.7L Diesel	300ft-lbs
6.8L Gasoline	250ft-lbs

• Intended to be commanded ONLY by applying battery voltage to certain customer-access blunt-cut wire circuits, and adding a target-speed resistor, and is only available when the vehicle road speed signal is zero

• Includes a circuit which changes from open-circuit to ground when enablers are met that may be used to turn on an indicator lamp while providing battery power to an aftermarket PTO clutch or solenoid

• Ramp rates are fixed and cannot be altered by the customer

• Refer to page 73 for example wiring diagrams

Typical SEIC Engagement Sequence for TorqShift™ PTO

1. 12V is applied to PTQ REQ1 circuit.

2. PCM looks for the following enabling conditions:
   - Parking brake applied.
   - Foot off of service brake
   - Vehicle in PARK (or NEUTRAL)
   - Foot off of accelerator pedal
   - Vehicle speed is 0 mph (stationary)
   - Engine at a stable base idle speed
   - Transmission Oil Temp above 20° F
   - 6.7L only - Engine Coolant Temperature (ECT) 20° F minimum
   - 6.8L only - Engine Coolant Temperature (ECT) 40° F minimum.

3. Command is sent to boost the transmission hydraulic line pressure to a minimum of 150 psi, which is used by the aftermarket PTO supplier to hold their PTO Clutch.Command is sent to increase engine speed to 900 rpm

4. The PTO RLY circuit changes from open-circuit to ground. If the up-fitter uses the circuit wiring offered in this bulletin then this will provide battery voltage to the aftermarket PTO solenoid to engage the PTO.

5. Engine RPM ramps to target speed determined by the resistor selection.

Mobile Mode

-operates in all gears and all vehicle speeds. The engine idle speed is elevated to 750 RPM when the Mobile Mode is initiated. Engine RPM is controlled by the driver through the throttle pedal but peak engine speed is not limited beyond normal operating ranges. There is no built in provision to limit engine speed to a pre-set RPM. To prevent over speed damage to attached pumps and equipment an additional aftermarket rpm limiter will be required. The maximum load allowable for mobile mode are shown in the table below.

Engine	Max. Load at Transmission PTO Gear, Mobiler y
6.7L Diesel	200ft-lbs
6.8L Gasoline	125ft-lbs

• If the PTO feature is used for extended periods of time without vehicle movement it is recommended to switch to Stationary Mode

• Refer to page 73A for example wiring diagrams

Typical Mobile Mode Engagement Sequence

1. 12V applied to PTO REQ2 circuit

2. PCM looks for the following enabling conditions:
   - Transmission Oil Temp above 20° F
   - 6.7L only - Engine Coolant Temperature (ECT) 20° F minimum
   - 6.8L only - Engine Coolant Temperature (ECT) 40° F minimum

3. PCM looks for voltage on PTO RPM circuit

4. Command is sent to boost transmission hydraulic line pressure to a minimum of 150 psi, which is used by the aftermarket PTO supplier to hold their PTO Clutch

5. The PTO RLY circuit changes from open-circuit toground. If the up-fitter uses the circuit wiring offered in this bulletin then this will provide battery voltage to the aftermarket PTO solenoid to engage the PTO.

6. Engine idle increases to 750 RPM.

Split Shaft Mode (Diesel Only)

- To install Split-Shaft mode, wire according to the diagram. Select elevated idle speed by installing a resistor (which provides voltage to PTO RPM input) as indicated in the wiring diagram.Split-Shaft mode requires that supply voltage (nominal 12vdc) be applied to both the **PTO REQ1** and **PTO REQ2** circuits.

• Refer to page 73B for example wiring diagrams.

Split Shaft Engagement procedure:

1. Ensure the following engine is running and the engine coolant temp is above 20° F

2. Apply park brake

3. Disconnect vehicle drive train (transmission in NEUTRAL, 4x4 DISENGAGED) and engage PTO load

4. With foot off both the service brake and accelerator pedals, turn Split-Shaft PTO on

5. While pressing the service brake, shift transmission into drive

6. The system will shift the transmission into 4th gear, lock the converter and then ramp up to the target idle speed in a controlled manner. Release the service brake*

*If vehicle unexpectedly lurches or moves upon releasing service brake, immediately depress brake pedal and shift transmission into PARK or NEUTRAL to secure vehicle. Contact Upfitter immediately

Battery Charge Protect (BCP):

-When 12V is applied to the BCP SW circuit, the engine speed goes immediately to 600. From this state, the PCM uses battery voltage as well as ambient air temp., engine oil temperature information to raise engine speed higher to maintain battery charge. Maximum engine speed in BCP mode is 1200 rpm. Loss of an operating condition after BCP is engaged will require the BCP switch to be cycled before BCP will re-engage.

• BCP CANNOT BE ACTIVE WHEN SEIC OR PTO MODES ARE ACTIVE

• A Resistor must be installed between PTO REF (VREF_C for 6.8L) and PTO RPM for both Diesel and Gasoline engines.

• Auto Entry: The BCP and Mobile operation modes allow PTO to engage automatically once the engine started provided the input switch is left in the on position prior to starting the engine. However, loss of an operating condition after PTO is initially engaged will require the switch to be cycled before PTO will re-engage.

• Refer to page 73 for example wiring diagram

Typical Battery Charge Protect Mode Engagement Sequence:

1. 12V applied to BCP SW circuit

2. PCM looks for the following enabling conditions:
   - Parking brake applied.
   - Foot off of service brake
   - Vehicle in PARK (or NEURTRAL)
   - Foot off of accelerator pedal
   - Vehicle speed is 0 mph (stationary)
   - Engine at a stable base idle speed
   - Transmission Oil Temp above 20° F
   - 6.7L only - Engine Coolant Temperature (ECT) 20° F minimum
   - 6.8L only - Engine Coolant Temperature (ECT) 40° F minimum.

3. PCM looks for a valid voltage between 0.2 to 4.7 Volts on the PTO RPM circuit

4. Vehicle idle fluctuates slightly as PCM enters BCP mode

5. The BCP LP circuit changes from open-circuit to ground. This is intended to provide a ground path for a BCP indicator lamp

NOTE: BCP is a smart system.Engine idle will not increase unless the vehicle senses an increase in electrical demand. Under periods of low electrical demand, the operator may not notice any change in engine RPM.It is recommend that the modifier install an indicator lamp to alert the operator that BCP is properly engaged.

Additional notes:

Adaptive Cooling

This PCM strategy automatically restricts engine power when it senses an over-temperature condition, and may interrupt the SEIC-PTO operation. Typically, the over-temperature condition it reacts to will also show up on the temperature gage on the instrument panel. Elevated engine speed, typical of SEIC operation, may help avoid Adaptive Cooling occurrence due to the resultant additional engine and transmission coolant flow. However, depending on the auxiliary PTO power being demanded, 900 rpm may not be enough to prevent the power train from entering Adaptive Cooling mode, but 1500 rpm may.

Input Resistor

ALL modes (SEIC, PTO) require usage of an input resistor. The resistor value may be obtained in Tables A & B.

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Table A- 6.7L Diesel SEIC Resistor Charts

6.7L Diesel Engine					
Stationary Mode			**Split Shaft Mode**		
Engine Target Speed (RPM)	Resistor (Ohms)	Voltage (volts)	Engine Target Speed (RPM)	Resistor (Ohms)	Voltage (volts)
900	54050	0.400	700	54050	0.400
1000	35098	0.590	800	36247	0.574
1200	19491	0.971	1000	20795	0.922
1400	12677	1.352	1200	13810	1.270
1600	8858	1.733	1400	9830	1.617
1800	6415	2.114	1600	7258	1.965
2000	4718	2.495	1800	5460	2.313
2200	3471	2.876	2000	4132	2.661
2400	2515	3.257	2200	3111	3.009
2600	1759	3.638	2400	2301	3.357
2800	1147	4.019	2600	1644	3.704
3000	641	4.400	2800	1099	4.052
			3000	641	4.400
Mobile Mode					
Engine Target Speed (RPM)	Resistor (Ohms)		Voltage (volts)		
Minimum 750 (Commanded by throttle)	360		4.644269		
** Voltages are exact to achieve RPM shown.					
Resistors are standard 5% values (1 watt) and yield RPM values +/- 32rpm					

Table B: 6.8L SEIC Resistor Chart

6.8L Gas Engine Stationary Mode					
Engine Target Speed (RPM)	Resistor (Ohms)	Voltage (volts)	Engine Target Speed (RPM)	Resistor (Ohms)	Voltage (volts)
800	54050	0.40	1700	4168	2.65
900	31454	0.65	1800	3403	2.90
1000	21411	0.90	1900	2760	3.15
1100	15735	1.15	2000	2212	3.40
1200	12086	1.40	2100	1738	3.65
1300	9542	1.65	2200	1326	3.90
1400	7668	1.90	2300	963	4.15
1500	6230	2.15	2400	641	4.40
1600	5092	2.40			
Mobile Mode					
Engine Target Speed (RPM)	Resistor (Ohms)		Voltage (volts)		
Minimum 750 (Commanded by throttle)	360		4.644269		
** Voltages are exact to achieve RPM shown.					
Resistors are standard 5% values (1 watt) and yield RPM values +/- 32rpm					

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Circuit Descriptions for PTO Modes
All circuits lead back to pins on the PCM.

F-650/750 – 6.7l Diesel				
Wire Color	Wire Tag	Circuit No.	Circuit Intent	Description
Yellow / Green	PTOREQ1	CE912	INPUT (VPWR)	**6.7L Diesel - PCM Pin C1232B-6** • Applying vehicle battery voltage to this wire initiates SEIC **Stationary Mode** process. • Signals TorqShift™ transmission to enter SEIC Stationary Mode strategy. • Verifies safety enablers. • Turns off OBD and other emission-related monitoring. • Elevates engine speed to target found at PTO-RPM circuit. • Invokes the PTO relay circuit when safety enablers are met. • Looks for the target engine speed requested at the PTO_RPM circuit using a resistor or POT.
Blue / Red	PTOREQ2	CE933	INPUT (VPWR)	**6.7L Diesel - PCM Pin C1232B-4** • Applying vehicle battery voltage to this wire initiates **Mobile PTO Mode**. • Signals TorqShift™ transmission to enter Mobile Mode strategy. • Verifies safety enablers. • Turns off OBD and other emission-related monitoring. • Invokes the PTO relay circuit when safety enablers are met. • Requires valid resistance on PTO_RPM input for system to function
Blue / White	PTORLY	CE326	OUTPUT	**6.7L Diesel - PCM Pin C1232B-11** • A low-side driver, changing from "open-circuit" to "ground" indicating that the engine is ready for the PTO operation to begin and that a PTO load may be applied. • Intended for powering a PTO indicator lamp, or turn on a relay coil (not to exceed 1 amp).LED lights require adding a resistor in series.
Green	PTORPM	CE914	INPUT (resistor)	**6.7L Diesel - PCM Pin C1232B-8** • Requires the addition of a resistor or potentiometer for any SEIC / PTO mode. • Resistor / potentiometer selection determines the fixed or variable engine target speed. • Combine in circuit with PTO-VREF and PTO-GND. • Speed range available: 900 rpm to 3000 rpm (700 min RPM for split shaft operation).
White / Brown	PTOREF	LE434	Reference Voltage	**6.7L Diesel - PCM Pin C1232B-55** • A 5-volt reference, buffered against shorts to ground or power, used to complete the resistor circuit for engine speed selection.
Gray / Violet	PTORTN	RE327	PCM Ground	**6.7L Diesel - PCM Pin C1232B-22** • A ground reference, buffered, used to complete the resistor circuit for engine speed selection.
Violet / Brown	BCP SW	CE926	INPUT (VPWR)	**6.7L Diesel - PCM Pin C1232B-21** • Applying vehicle battery voltage to this wire begins BCP. • BCP regulates engine speed between 600 to1200 rpm to maintain required charge system voltage
Brown / Blue	BCP LP	CE140	OUTPUT	**6.7L Diesel - PCM Pin C1232B-20** • A low-side driver, changing from "open-circuit" to "ground" indicating that BCP is in effect. • Intended for powering an indicator lamp.

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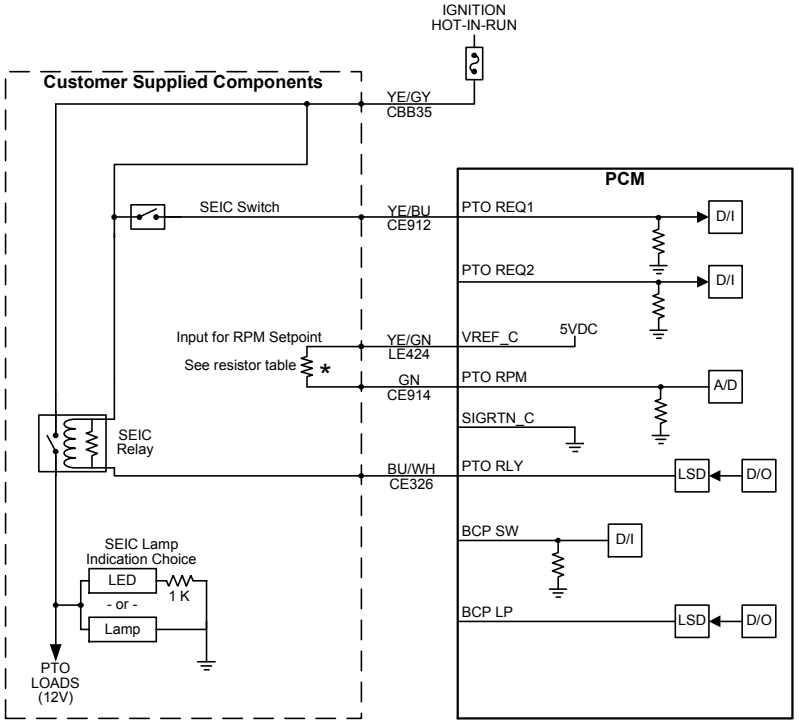
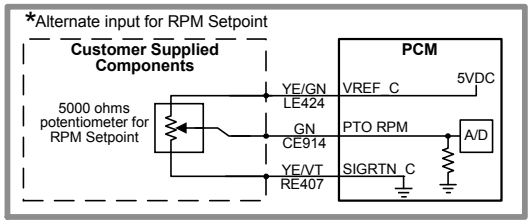
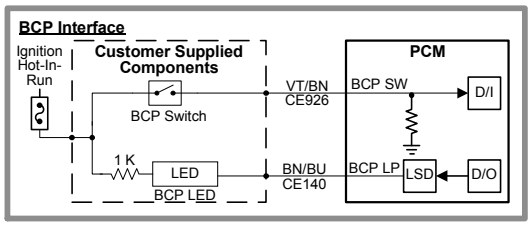
Circuit Descriptions for PTO Modes (Cont)
All circuits lead back to pins on the PCM.

F-650/750 – 6.8L Gasoline Engine PCM				
Wire Color	Wire Tag	Circuit No.	Circuit Intent	Description
Yellow / Blue	PTOREQ1	CE912	INPUT (VPWR)	**PCM Pin C175B-84** • Applying vehicle battery voltage to this wire initiates SEIC **Stationary Mode** process. • Signals TorqShift™ transmission to enter SEIC Stationary Mode strategy. • Verifies safety enablers. • Turns off OBD and other emission-related monitoring. • Elevates engine speed to target found at PTO-RPM circuit. • Invokes the PTO relay circuit when safety enablers are met. • Looks for the target engine speed requested at the PTO_RPM circuit using a resistor or POT
Blue / Red	PTOREQ2	CE933	INPUT (VPWR)	**PCM Pin C175B-4** • Applying vehicle battery voltage to this wire initiates **Mobile PTO Mode**. • Signals TorqShift™ transmission to enter Mobile mode strategy. • Verifies safety enablers. • Turns off OBD and other emission-related monitoring. • Invokes the PTO relay circuit when safety enablers are met. • Requires valid resistance on PTO_RPM input for system to function
Blue / White	PTORLY	CE326	OUTPUT	**PCM Pin C175B-98** • A low-side driver, changing from "open-circuit" to "ground" indicating that the engine is ready for PTO operation to begin and that a PTO load may be applied. • Intended for powering a PTO indicator lamp, or turn on a relay coil (not to exceed 1 amp).LED lights require adding a resistor in series.
Green	PTORPM	CE914	INPUT (resistor)	**PCM Pin C175B-85** • Requires the addition of a resistor or potentiometer for any SEIC / PTO mode. • Resistor / potentiometer selection determines the fixed or variable engine target speed. • Combine in circuit with PTO_VREF (+5VDC). • Speed range available: 910 rpm to 2400 rpm
Yellow / Green	VREF_C	LE424	Reference Voltage	**PCM Pin C175B-52** • A +5-volt reference, buffered against shorts to ground or power, used to complete the resistor circuit for engine speed selection.
Yellow / Violet	SIGRTN_C	RE407	PCM Ground	**PCM Pin C175B-51** • A ground reference, buffered, used to complete the resistor circuit for engine speed selection.
Violet / Brown	BCP SW	CE926	INPUT (VPWR)	**PCM Pin C175B-82** • Applying vehicle battery voltage to this wire begins BCP. • BCP regulates engine speed between 600 to1200 rpm to maintain required charge system voltage
Brown / Blue	BCP LP	CE140	OUTPUT	**PCM Pin C175B-17** • A low-side driver, changing from "open-circuit" to "ground" indicating that BCP is in effect. • Intended for powering an LED lamp (40mA max.).

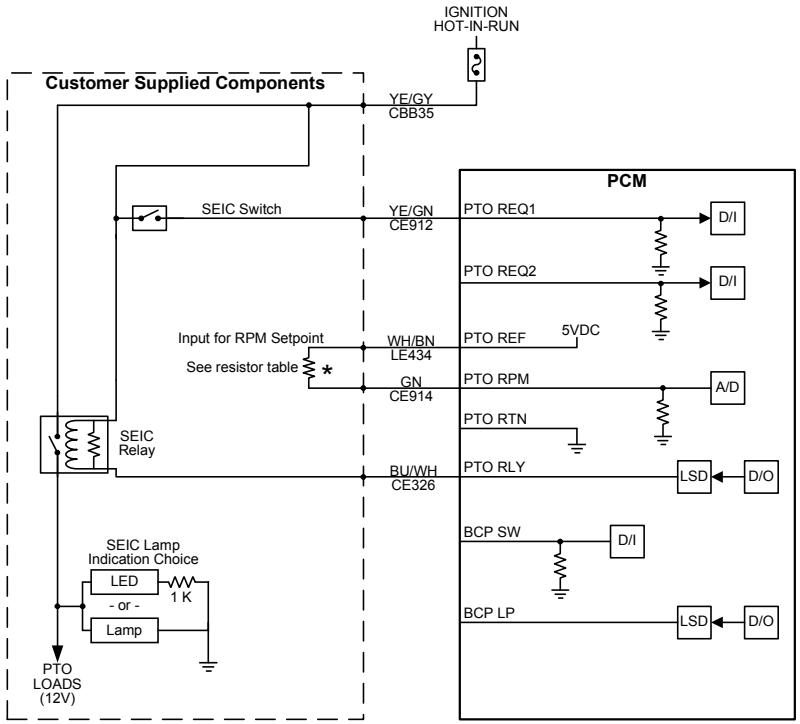
SEIC and BCP Interface
2017 F-650/750 6.8L Gasoline

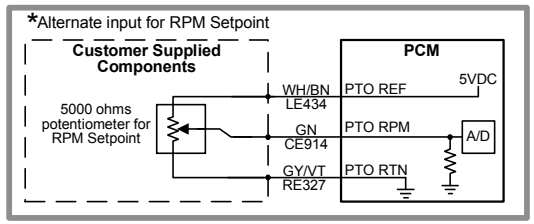


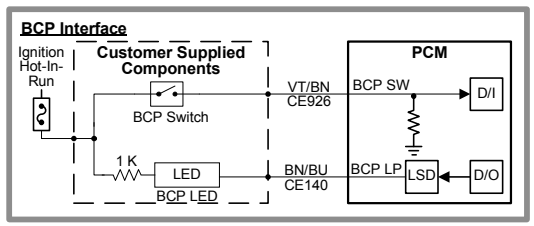




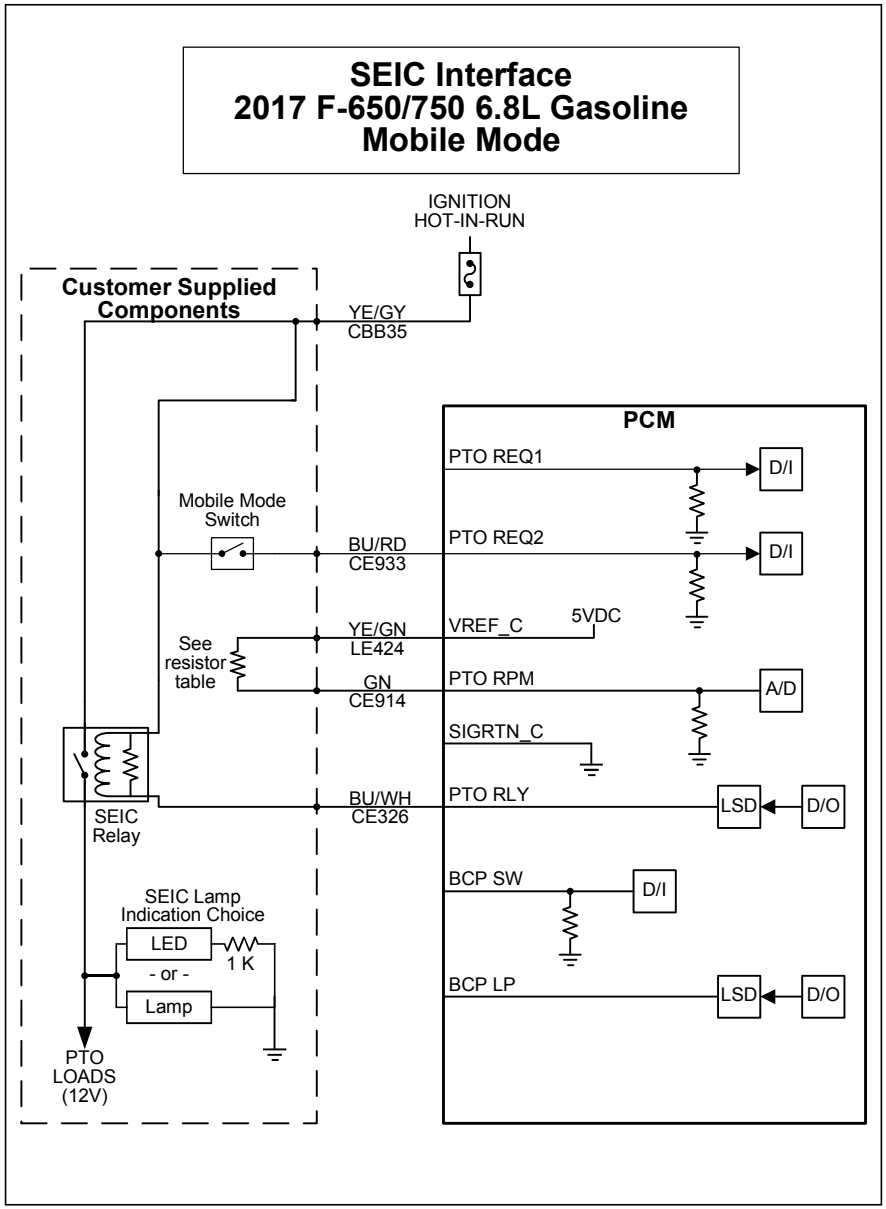
SEIC and BCP Interface
2017 F-650/750 6.7L



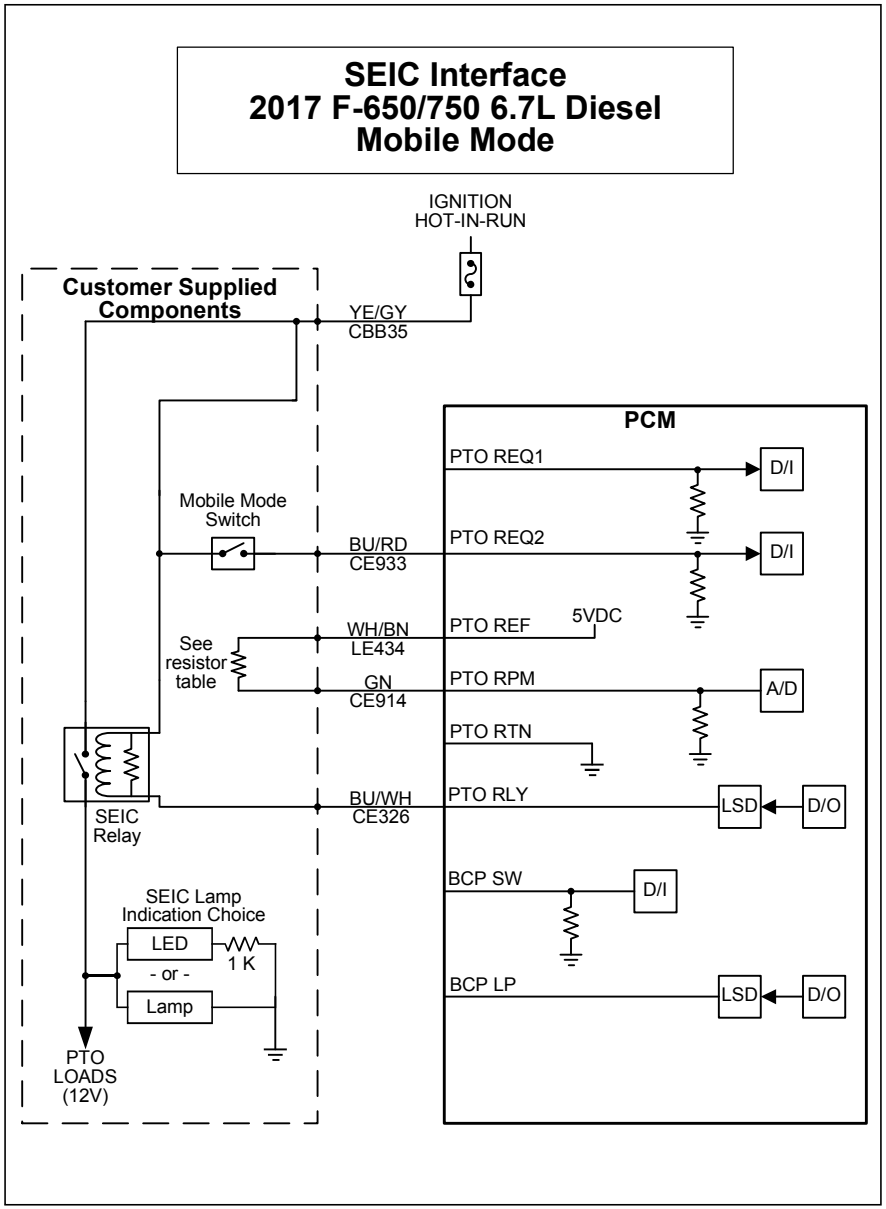




SEIC Interface
2017 F-650/750 6.8L Gasoline
Mobile Mode



SEIC Interface
2017 F-650/750 6.7L Diesel
Mobile Mode



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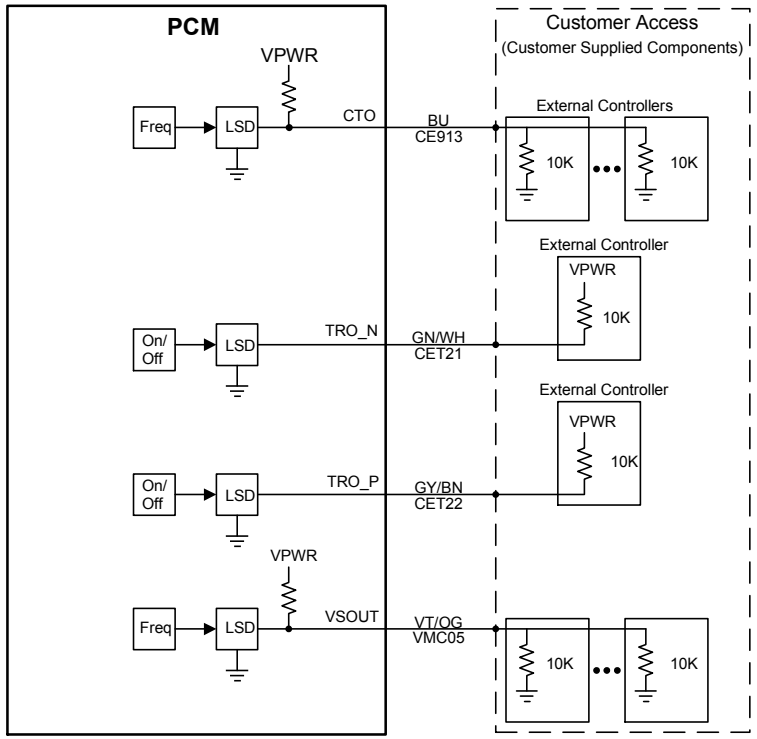
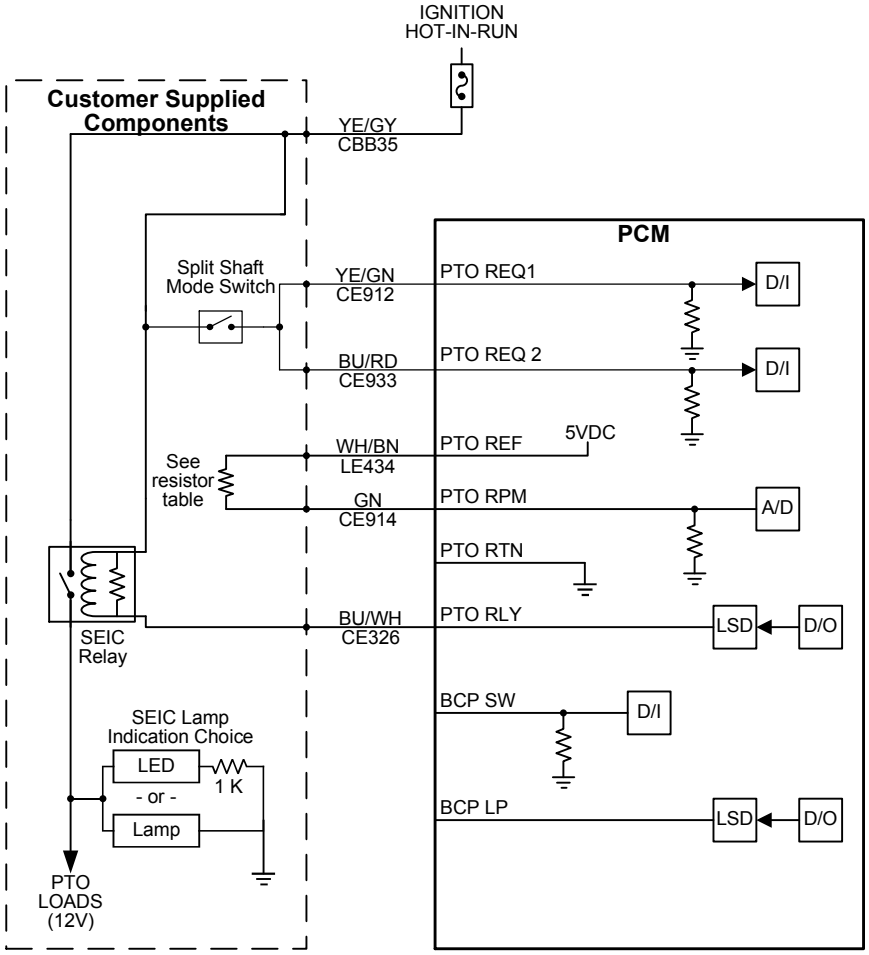
Customer Access
2017 F-650/750
6.7L Diesel / 6.8L Gasoline



SEIC Interface
2017 F-650/750 6.7L Diesel
Split Shaft Mode



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6.7L Diesel and 6.8L Gasoline SEIC / BCP Enable/Disable Conditions

Vehicle Conditions to Enable SEIC (all are required)	Vehicle Conditions that Disable SEIC (any one required - See Note-1)	SEIC	Split Shaft (Diesel only)	Mobile Mode
Parking brake applied.	Parking brake disengaged.	Yes	Yes	No
Foot off of service brake	Depressing service brake	Yes	See note -2	No
Vehicle in PARK (or NEUTRAL)	Vehicle take out of PARK (or NEUTRAL)	Yes	See note -2	No
Foot off of accelerator pedal	Accelerator pedal depressed	Yes	Yes	No
Vehicle speed is 0 mph (stationary)	Vehicle speed is not 0 mph (stationary)	Yes	Yes	No
Engine at a stable base idle speed		Yes	Yes	No
Transmission Oil Temp above 20°F	Transmission Oil Temperature (TOT) exceeds 240°F.	Yes	Yes	Yes
Engine Coolant Temperature (ECT) 20° F minimum (6.7L)	Engine Coolant Temperature (ECT) exceeds 234° F	Yes	Yes	Yes
Engine Coolant Temperature (ECT) 40 degree F minimum. (6.8L)	Engine Coolant Temperature Limit (ECT)	Yes	N/A	Yes
	Catalyst Temperature Limit	Yes	Yes	Yes

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Note 1: **A “change-of-state” at the “PTO-Request” circuit is required to re-invoke SEIC. When a disabler is seen by the PCM the "PTO-Indicator" circuit changes from "ground-source" to “open-circuit", SEIC drops out, and the engine speed returns to base idle. To re-initiate SEIC the operator must turn off the aftermarket PTO switch (removing command voltage to the “PTO-Mode” circuit) and turn it back on again.**

Note 2: **Please see Split Shaft Mode in Special Situations.**

Table B: 6.8L SEIC Resistor Chart

6.8L Gas Engine					
Engine Target Speed (RPM)	Resistor (Ohm)	Voltage (volt)	Engine Target Speed (RPM)	Resistor (Ohm)	Voltage (volt)
(Base)	100000	0.218	1500	4250	2.63
650	54400	0.4	1600	3430	2.89
750	30880	0.665	1700	2740	3.162
800	25320	0.787	1800	2168	3.426
900	17520	1.06	1900	1684	3.685
1000	13280	1.31	2000	1247	3.954
1100	10220	1.578	2100	891	4.203
1200	8130	1.837	2200	544	4.482
1300	6500	2.102	2300	255	4.741
1400	5220	2.375	2400	0 (closed circuit)	5

** Voltages are exact to achieve RPM shown.
Resistors are standard 5% values (1 watt) and yield RPM values +/- 32rpm

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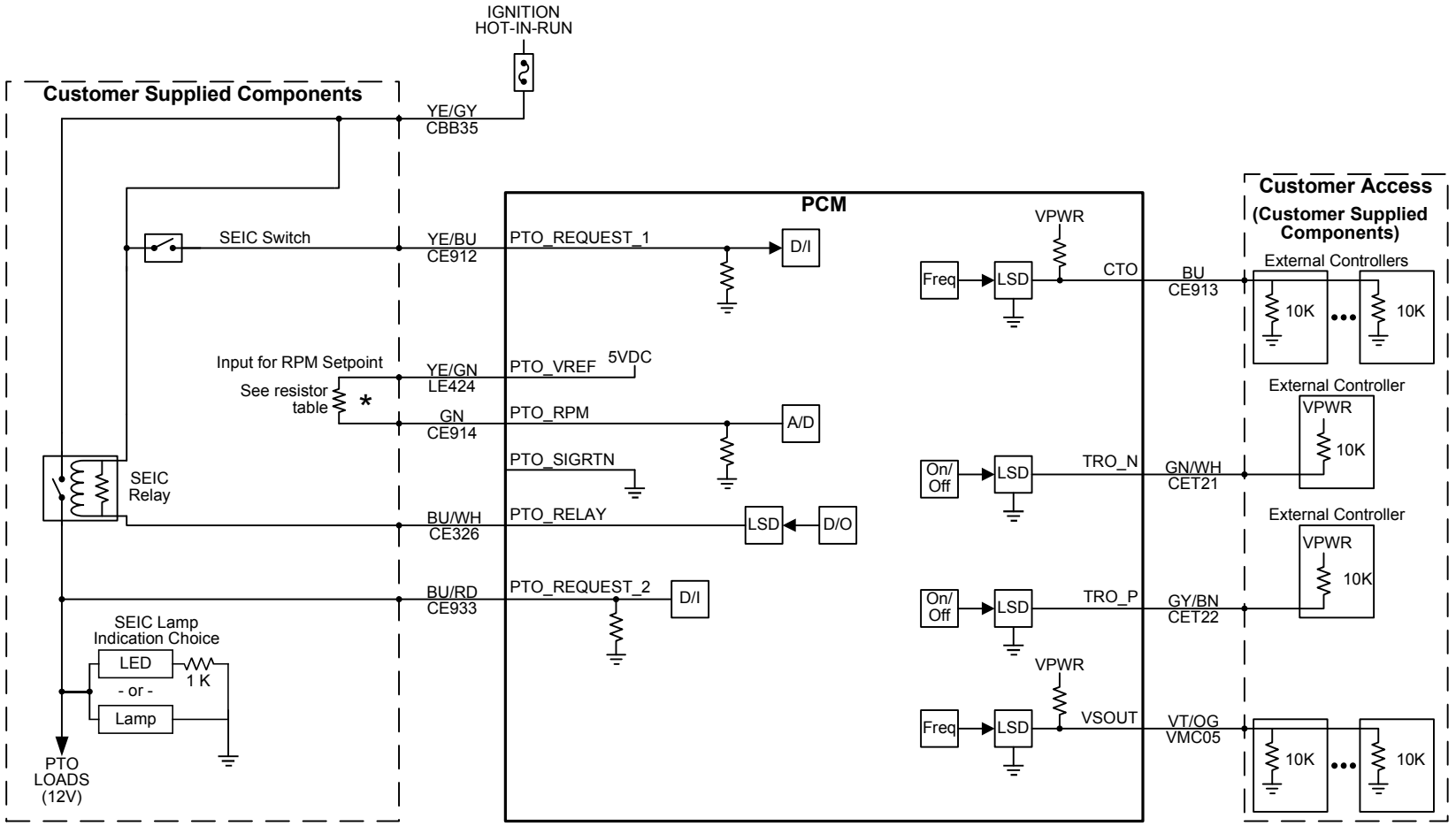
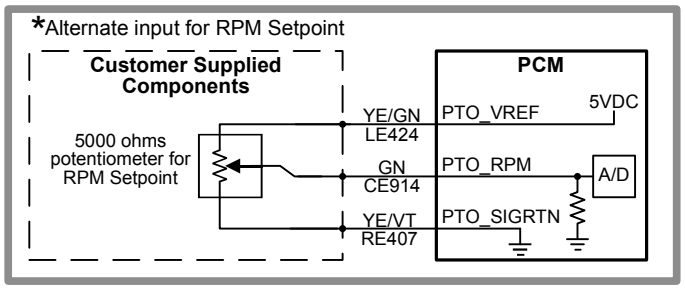
6.8L Circuit Descriptions for SEIC

All circuits lead back to pins on the PCM.

F-650/750 – 6.8L Gas Engine PCM		
Circuit Intent	Wire Tag	Description
INPUT (VPWR)	PTO_REQUEST1	**PCM Pin C1551B-84 Circuit No. CE912 Wire Color: Yellow / Blue* (*Early Builds: Yellow / Green)** • Applying vehicle battery voltage to this wire begins SEIC process. • Verifies safety enablers. • Turns off OBD and other emission-related monitoring. • Elevates engine speed to 900 rpm "standby" speed if it finds an "open-circuit" at PTO_RPM Select. • Invokes the PTO Indicator circuit when safety enablers are met. • Looks for the target engine speed requested at the PTO_RPM Select circuit using a resistor or potentiometer.
INPUT (VPWR)	PTO_REQUEST2	**PCM Pin C1551B -88 Circuit No. CE933 Wire Color: Blue / Red* (*Early Builds: Blue / Orange)** • Applying vehicle battery voltage to this wire signals the PCM that the PTO load is being applied.
OUTPUT	PTO_RELAY	**PCM Pin C1551B-98 Circuit No. CE326 Wire Color: Blue / White** • A low-side driver, changing from "open-circuit" to "ground" indicating that the engine is ready for the PTO operation to begin, and that a PTO load may be applied. • Intended for powering a PTO indicator lamp, or turn on a relay coil (not to exceed 1 amp). LED lights require adding a resistor in series.
OUTPUT	PTO_VREF	**PCM Pin C1551B-52 Circuit No. LE424 Wire Color: Yellow / Green** +5VDC reference voltage.
INPUT (resistor)	PTO_RPM	**PCM Pin C1551B-85 Circuit No. CE914 Wire Color: Green** • Add a resistor or potentiometer to obtain fixed or variable engine target speed. • Combine in circuit with PTO_VREF (+5VDC) • Speed range available: 650 rpm to 2400 rpm
INPUT	PTO_SIGRTN	**PCM Pin C1551B-51 Circuit No. RE407 Wire Color: Yellow / Violet** •A ground reference, buffered, used to complete the potentiometer circuit for engine speed selection.

SEIC Interface
2017 F-650/750 6.8L





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SEIC / PTO – General System Behavior

• To guarantee full advertised torque capability at the automatic transmission PTO gear and through the aftermarket PTO clutch, the hydraulic line pressure serving the aftermarket PTO clutch must be elevated. Applying battery voltage to the PTO circuit is the signal to the transmission to enter SEIC strategy and these important functions. This applies to both stationary and mobile PTO operations.

• **If an SEIC disabler occurs in any mode:**
  o **ALL engines will require a "change-of-state", meaning the operator is required to turn off voltage to the "PTO-Request" circuit, and back on again to re-invoke SEIC and PTO operation.**

• If the Transmission Oil Temperature (TOT) sensor reaches 240°F, the PTO system may disengage, preventing torque from being delivered to the aftermarket transmission PTO.

• SEIC/PTO strategy function in the PCM is not affected by the loss of vehicle battery electrical power.

• SEIC Ramp Rate (fixed, not programmable):
  o When first applying battery voltage to the PTO circuit the PCM directs the engine to ramp to the initial target that it sees at the RPM circuit at a rate of 200 rpm/sec

  o The SEIC system offers buffered PCM voltage and ground circuits to complete the resistor circuits for engine speed.

  o If there is a high electrical demand on the chassis battery, such as from aftermarket inverters or generators, etc., the actual elevated idle engine speed may vary with that demand for any given resistance in the SEIC circuit.

SEIC / PTO – General System Behavior (cont.)

• **Correlation between engine speed and resistor values:**

  o Both the 6.7L Diesel and 6.8L Gasoline applications uses a 5 volt reference signal and ground for the PTO_RPM input circuit.

  o Normal base engine calibration allows approximately +/-50 rpm fluctuation. If any factory vehicle accessories are used during SEIC, e.g. a/c, defroster, etc., then that fluctuation may increase to approximately +/-100 rpm or more.

  o The sudden loss of aftermarket PTO hydraulic pressure during SEIC/PTO operation, like a ruptured hose, may send SEIC engine speed to near 3000 rpm. It is recommended that a hydraulic pressure switch linked to SEIC/PTO be added to disable SEIC/PTO when a hose ruptures.

  o Because of a service brake circuit characteristic at engine-start, invoking SEIC may cause the diagnostic error code FFG_BOO to get flagged (recorded in the PCM). To avoid this, simply tap the service brake pedal sometime after engine-start and prior to invoking SEIC. Once the code is set, SEIC may not be available until it is erased.

APPENDIX

Vocabulary / Definitions

PTO Applications: Includes all forms of mechanical power, using the vehicle powertrain as the source, including transmission side-mounted PTO, split-shaft PTO, crankshaft PTO, and FEAD-mounted clutch-pumps, air compressors, and generators.
Clutch-Pump: A type of PTO that is driven by the vehicle engine crankshaft through the FEAD pulley system.
PCM: Powertrain Control Module
FEAD: Front End Accessory Drive (belt and pulley drive system)
SEIC: Stationary Elevated Idle Control
VSO, VSOUT: Vehicle Speed Out – see Customer Accessible Signal Description
TPO: Throttle Position Out. Direct customer access not provided.
ETC: Engine Coolant Temperature
CTO: Clean Tach Out - Customer Accessible Signal Description
VPWR: Vehicle Power Battery Voltage.
BCP_IL / BCP_SW: Battery Charge Protection Illumination Lamp / Battery Charge Protection Switch
Intermittent Duty Usage: 5 minutes out of a 15 minute period or less of continuous operation.
Continuous Duty Usage: Greater than 5 minutes out of a 15 minute period of continuous operation.
Change-of-State: Part of the SEIC strategy. If any condition is met that disables SEIC, the operator is required to turn the PTO switch OFF and back ON again before SEIC will allow elevated idle to return.
TRO_N, TRO_P: Transmission Range Output, indicating NEUTRAL ONLY, or PARK-ONLY
BCM: Body Control Module, located at lower passenger-side of instrument panel

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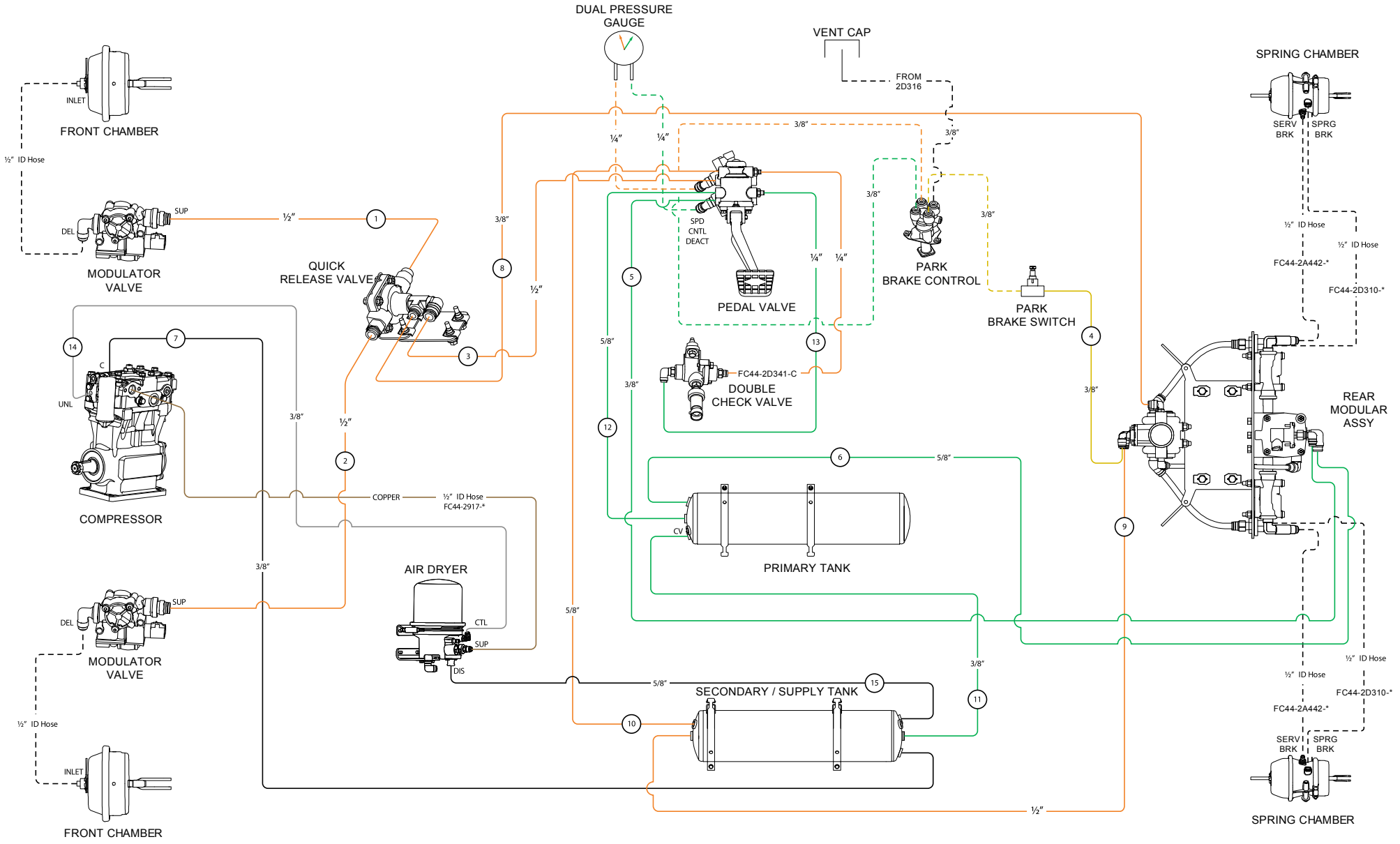
87
F650/750

F650/750 SUPER DUTY
STRAIGHT TRUCK AIR BRAKE SCHEMATIC
REGULAR CAB W/ AIR DRYER

2018
MODEL YEAR



NOTES — [ ] DIMENSIONS ARE INCHES.

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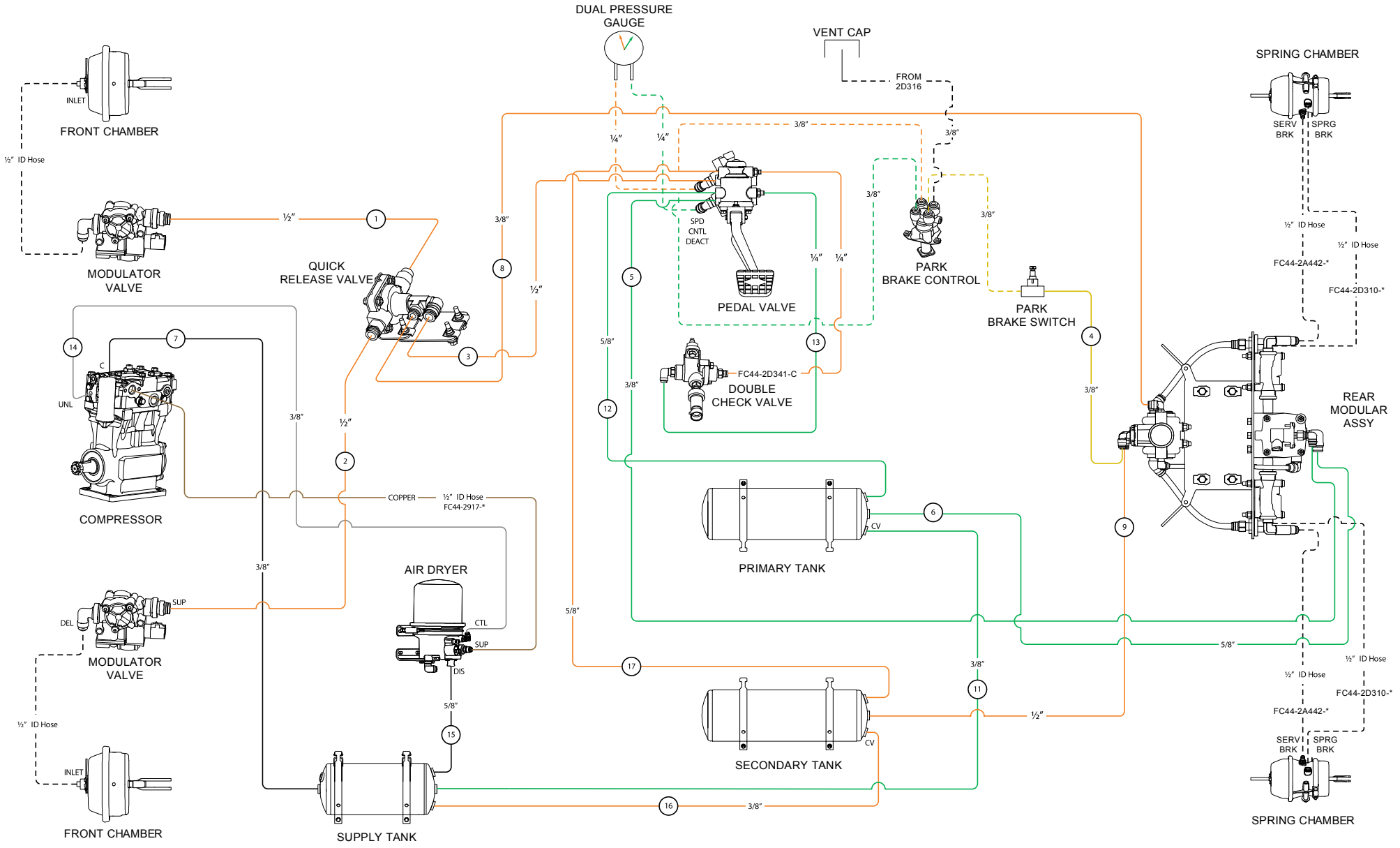
F650/750

F650/750 SUPER DUTY
STRAIGHT TRUCK AIR BRAKE SCHEMATIC
SUPER & CREW CAB W/ AIR DRYER

2018
MODEL YEAR



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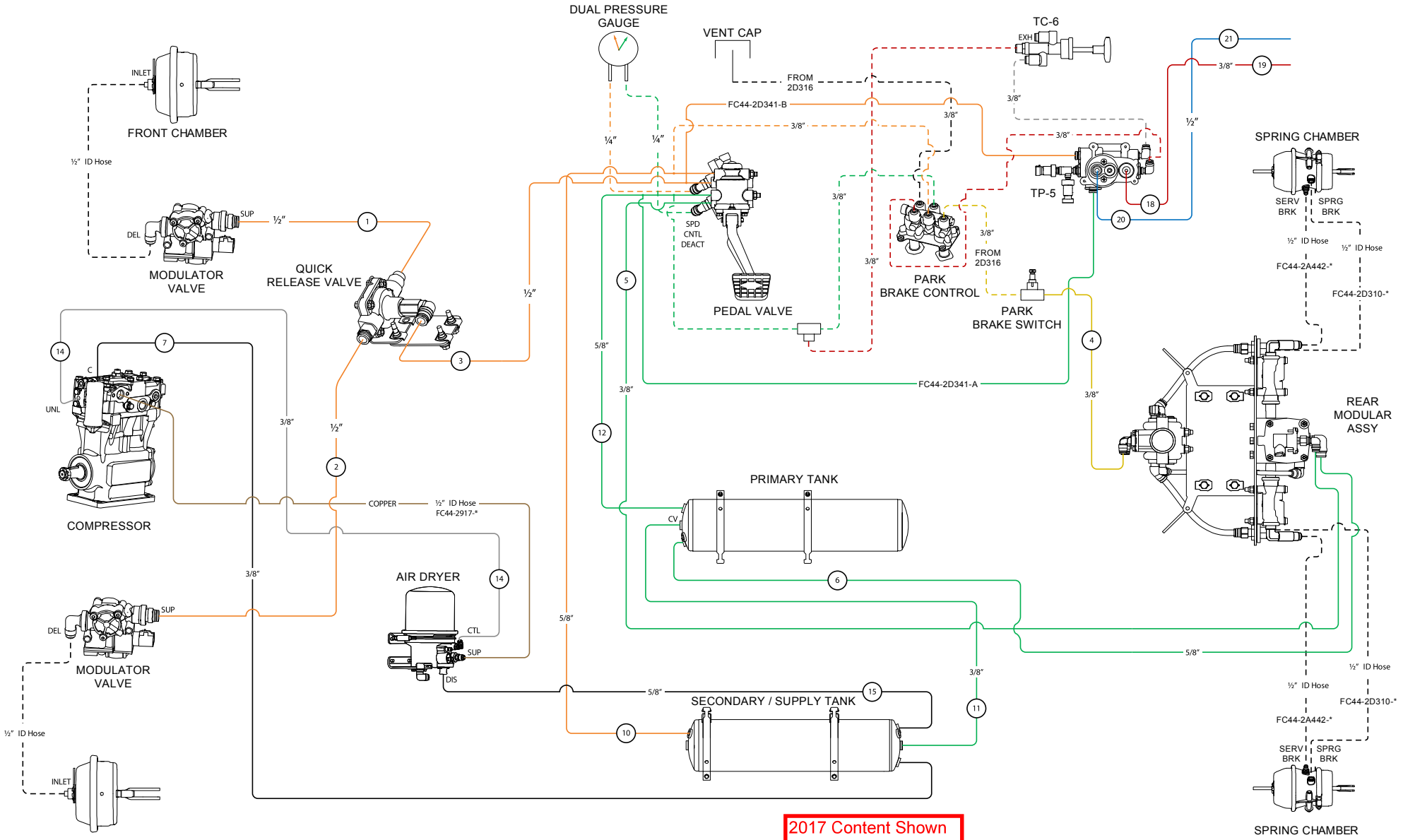
F650/750

F650/750 SUPER DUTY
TRACTOR TRUCK AIR BRAKE SCHEMATIC
REGULAR CAB W/ AIR DRYER

2018
MODEL YEAR



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NOTES — [ ] DIMENSIONS ARE INCHES.

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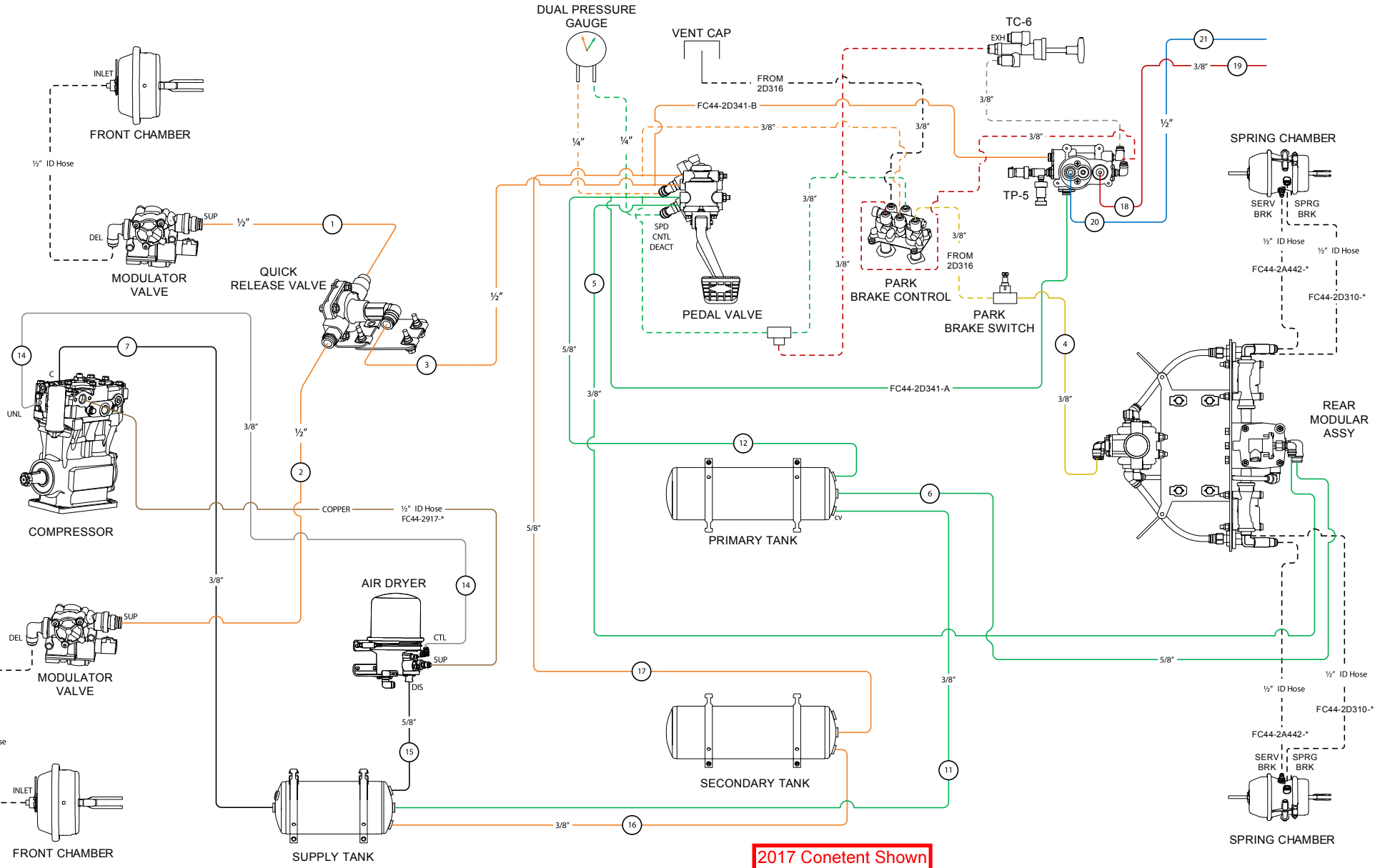
F650/750

F650/750 SUPER DUTY
TRACTOR AIR BRAKE SCHEMATIC
SUPER & CREW CAB W/ AIR DRYER

2018
MODEL YEAR



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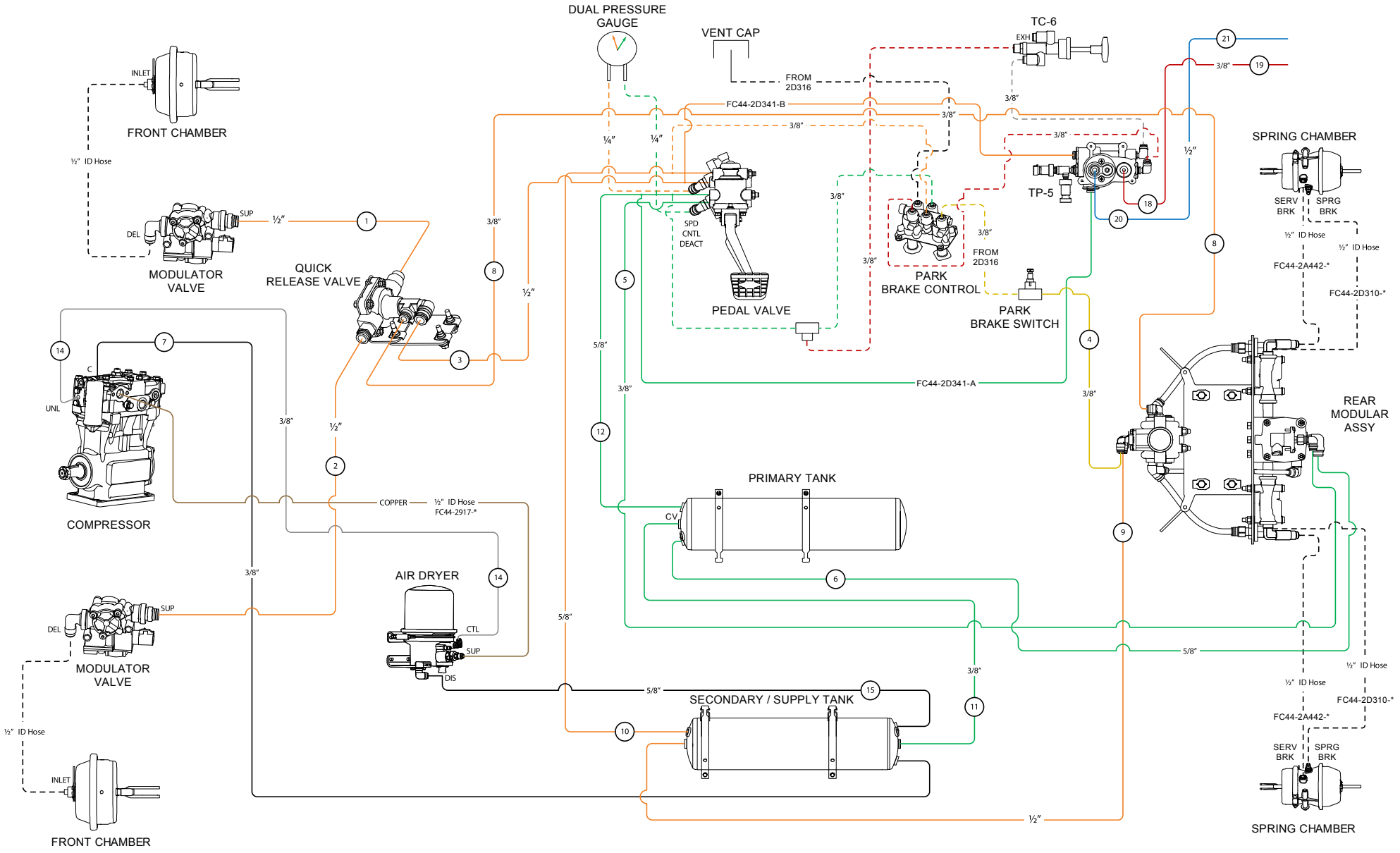
NOTES — [ ] DIMENSIONS ARE INCHES.

91
F650/750

F650/750 SUPER DUTY
STRAIGHT TRUCK W/TRAILER TOW AIR BRAKE SCHEMATIC
REGULAR CAB W/ AIR DRYER

2018
MODEL YEAR

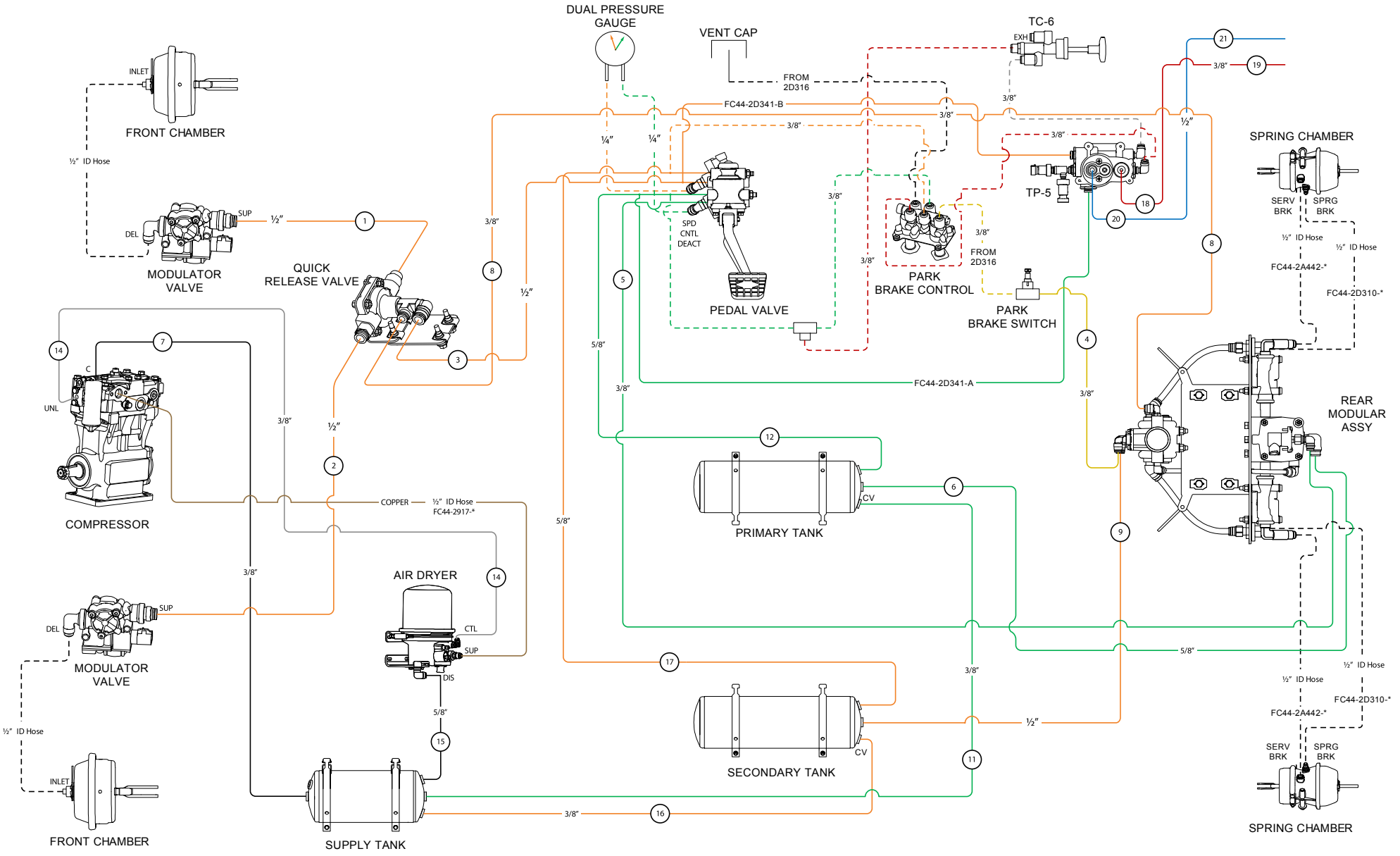


NOTES — [ ] DIMENSIONS ARE INCHES.

92
F650/750

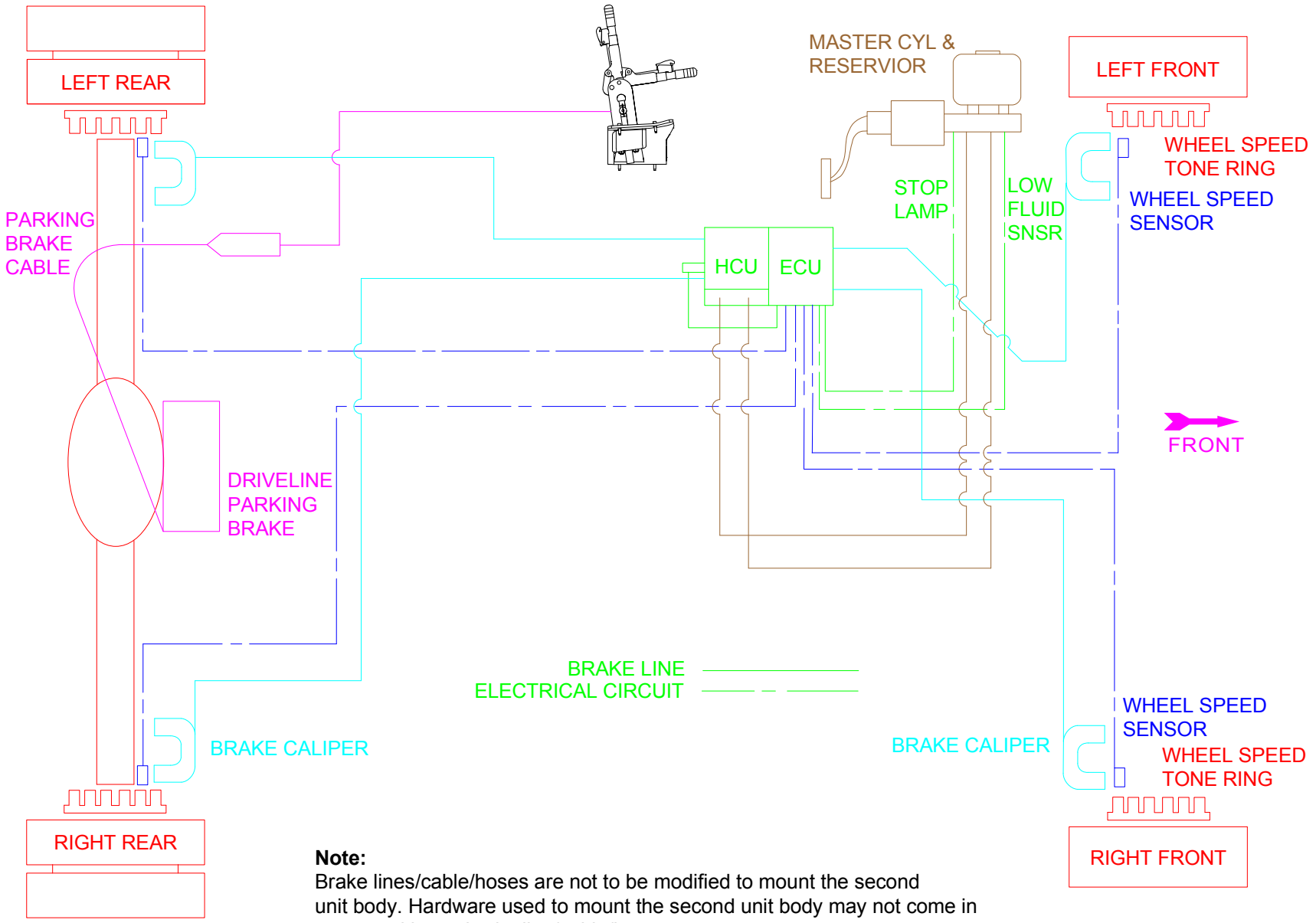
F650/750 SUPER DUTY
STRAIGHT TRUCK W/TRAILER TOW AIR BRAKE SCHEMATIC
SUPER & CREW CAB W/ AIR DRYER

2018
MODEL YEAR



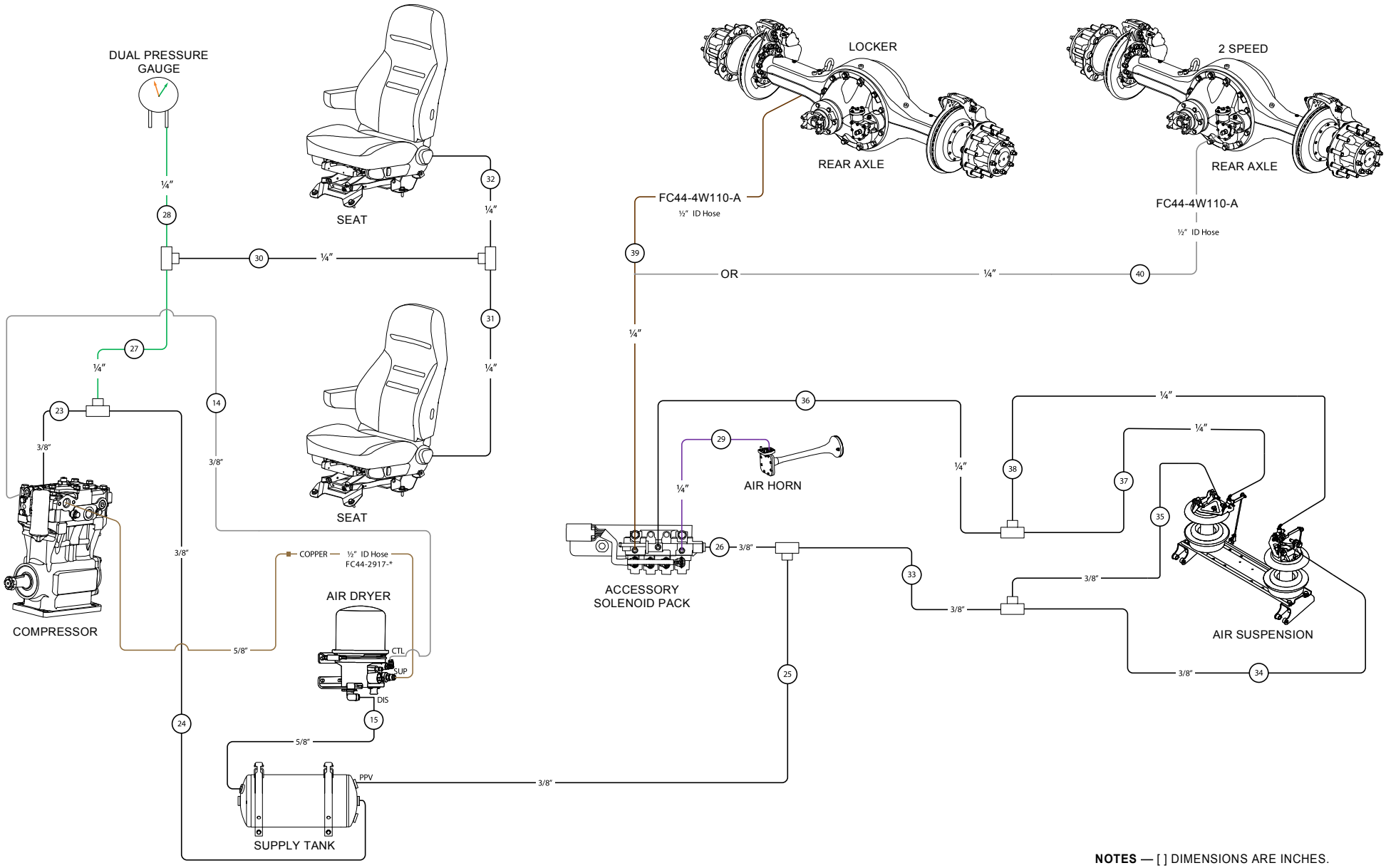
NOTES — [ ] DIMENSIONS ARE INCHES.

F650/750 SUPER DUTY
HYDRAULIC BRAKE SYSTEM
HYDRAULIC BRAKE SCHEMATIC



Note:
Brake lines/cable/hoses are not to be modified to mount the second unit body. Hardware used to mount the second unit body may not come in contact with any brake line/cable/hose.

F650/750 SUPER DUTY
AIR ACCESSORIES SCHEMATIC W/AIR DRYERCOMPRESSOR



NOTES — [ ] DIMENSIONS ARE INCHES.